

INDEX OF AUTHORS' NAMES.

ABSTRACTS. 1884.

A.

- Abel, Sir F. A., and B. Redwood, petroleum-testing in tropical climates with Abel's apparatus, 877.
- Abelli. See Schiaparelli.
- Abney, W. W., and R. Festing, atmospheric absorption of aqueous vapour, 241.
- relation between radiation, energy, and temperature, 249.
- Ackermann, E., salts and ethers of aurin and rosolic acid, 1339.
- Adam, P., bromoparaxyleneol, 1329.
- Adrian and Moreaux, preparation of quassin, 908.
- Ackermann and Särnström, reduction of iron oxide with carbonic oxide, 20.
- Albrecht. See Will.
- Alexéeff, thermal effect of solution, 1244.
- Allen and Underwood, oxidation of diethylbenzene, 587.
- Allihn, F., action of dilute hydrochloric acid on starch, 721.
- Amagat, E. H., compressibility of air and carbonic anhydride, 146.
- compressibility of gases, 145.
- compressibility of rarefied air, hydrogen, and carbonic anhydride, 146.
- estimation of the dry extract of wines, 1432.
- Amat. See Parmentier.
- Amato, D., chemical action of light, 1237.
- Amthor, C., studies on ripe cherries and currants, 766.
- Andés, E. L., refining of shellac, 380.
- Andouard, A., the guano of Cape Vert, 359.
- Andouard, A., and V. Dézaunay, effect of exhausted beet pulp on cow's milk, 347.
- André, G., barium oxychloride, 712.
- heats of formation of lead oxychlorides and oxybromides, 384.
- André, G., heats of formation of mercuric oxybromides, 707.
- thermochemistry of the oxychlorides, 884.
- Andreae, J. L., solubility of solid substances in water at various temperatures, 1090.
- Andreasch, R., allylcarbamide, 731.
- Andres, E., soap varnishes, 648.
- Andresen, M., trichloroquinone-chloramide, tri- and tetra-chloroquinone, 431.
- Angeblis, A., and R. Anschütz, action of aluminium chloride on a mixture of benzene and vinyl bromide, and of benzene and vinyl tribromide, 753.
- syntheses of dimethylantracene hydride, and diphenylethane from benzene and ethylidene chloride, 753.
- Angot, A., effect of altitude on plant-growth, 627.
- Anschütz, R., acridine picrate, 908.
- bromine substitution-products of ethane and ethylene, 32.
- chrysaniline, 1034.
- monethyl oxalate, 296.
- syntheses by means of aluminium chloride, 754.
- unsymmetrical tetraphenylethane, 326.
- use of dry oxalic acid in the formation of condensation-products, 1019.
- Anschütz, R., and J. Klein, tetraphenylethane, 1034.
- Anschütz. See also Angeblis.
- Arche, A., cerite, and the extraction of cerium, lanthanum, and didymium therefrom, 557.
- Arche, A., and C. Hassack, analysis of a pit water, 782.
- Armstrong, H. E., and A. K. Miller, contributions to our knowledge of camphor, 43.
- metaisopropylmethylbenzene, 43, 299.

- Arnaud, cinchonamine, 87.
 Arnaud, A., and L. Padé, testing for nitric acid and nitrates in vegetable tissues, 1074.
 Arnold, C., ptomaines and similar bodies, 469.
 Arnold and Schneidemühle, poisonous matter of lupines, 915.
 Arrhenius, S., the Clausius-Williamson hypothesis, 701.
 Arth, G., decomposition of ethyl carbonate, 731.
 — menthyl chloride, 167.
 — oxidation of menthol by potassium permanganate, 755.
 Arzruni and Baerwald, relations between the crystalline form and chemical composition of arsenical iron pyrites, 404.
 Aschmann, C., preparation of an antiseptic compound, 782.
 Aschan, O., action of thiocarbimides on amido-acids, 907.
 Assche, F. v., separation of rays of high and low refrangibility, 241.
 Assmus, feeding experiments on pigeons, 473.
 Astre, M., adulteration of verdigris, 1236.
 Athenstädt, J., preparation of aluminium acetate, 540.
 Athenstädt. See also Hübner.
 Atkinson, R. W., volumetric estimation of iron, 873.
 Atwater, W. O., absorption of nitrogenous food-stuffs by plants, 1401.
 Aubert, H., exhalation of carbonic acid by frogs, 91.
 Aubin, E., estimation of phosphoric acids in superphosphates, 1424.
 Aubin. See also Müntz.
 Auer, C., gadolinite from Ytterby, 717.
 Auer, H., ethylphenol, 1002.
 Austen, P. T., analysis of stannate of soda, 498.
 Austen, P. T., and J. C. Chamberlain, ammonium ferrous sulphate as a reagent for nitric acid, 493.
 Austen, P. T., and F. A. Wilber, purification of ammonium fluoride, 492.
 Ayres, borax in California, 260.
- B.**
- Babo, V., employment of milch cows for labour, 1396.
 Bachmeyer, W., analyses of potable water, 1431.
 Baerwald, C., action of hydrogen peroxide on molybdates, 965.
 Baerwald. See also Arzruni.
 Baessler, A., derivatives of dimethyl-quinol, 1329.
 Baeyer, A., chemical nomenclature, 998.
 — compounds of the indigo-group, 73.
 — derivatives of orthamidoacetophenone, 1021.
 Baeyer, A., and F. Bloem, formation of indigo from orthamidoacetophenone, 1026.
 Baeyer, A., and V. Drewsen, action of orthonitrobenzaldehyde on aldehyde, 58.
 Baeyer, A., and B. Fritsch, orth-hydroxyphenylacetic acid and its derivatives, 1021.
 Baeyer, A., and B. Homolka, quinisatin, 78, 1029.
 Baeyer, A., and C. Pape, derivatives of orthoxylene, 898.
 Baeyer, A., and W. H. Perkin, Jun., benzoylactic acid, 63, 838.
 — — derivatives of hydrindonaphthene, 752.
 — — synthesis of naphthalene derivatives, 907.
 Baker, H. B., direct union of nitrogen and hydrogen, 152.
 Balbiano, L., constitution of dibrom-anisic acid, 1172.
 — some fluorine compounds of copper, 1264.
 Balbiani and others, suggestions for the destruction of Phylloxera, 920.
 Balland, alteration of flour, 236, 532.
 — analyses of flour, 374.
 — analyses of the wines of Médéat, 1086.
 — germinated wheat, 1087.
 — Indian wheat, 355.
 Ballo, M., chemistry of plants, 765.
 — composition of Borhegyer water, 978.
 — estimation of carbonic anhydride in air, 1076.
 Bamberger, E., retene, 1040.
 — triamidophenol, 309.
 Bandrowski, E., action of bibasic organic acids on hydrazobenzene, 1015.
 v. Baratta, cultivation of *Sorghum halepense*, 921.
 Barbaglia, G. A., alkaloids of *Buxus sempervirens*, 188.
 Baros. See Stouhal.
 Barral, J. A., salicylic acid in beer and wine, 778.
 Barrois, glaucophane schists of the Island of Groix, 412.

- Barth, L., and M. Kretschy, picro-toxin, 846.
- Barth, A., and H. Henningsen, rearing calves on skim-milk, 852.
- Barth, L., and H. Weidel, oxidation of morphine, 85.
- Barth. See also Nessler.
- Barthélemy, A., infection of eggs by chicken cholera, 1398.
- presence of arsenic in wines free from artificial colouring matter, 526.
- Bartoli, A., and G. Papasogli, a new cell founded on the oxidation of carbon in the cold, 1239.
- electrolysis of glycerol with electrodes of carbon and platinum, 170.
- electrolysis of solutions of ammonia and ammoniacal salts with carbon electrodes, 176.
- Bartoli, A., and E. Stracciati, specific heat of mellite, 1244.
- Basarow, A., sulphuring vineyards, 629.
- Basler, A., condensation-products of paranitrobenzyl alcohol, 310.
- substituted aromatic β -lactones and derivatives of cinnamic acid, 603, 1172.
- Bastelaer, A. v., butter analyses, 120.
- Baubigny, H., atomic weight of aluminium, 395.
- determination of the atomic weight of chromium, 894.
- determination of atomic weights by means of metallic sulphates, 256.
- estimation of chromium, 1428.
- pure chromic sulphate, 558.
- Bauer, K., some reactions of tertiary alcoholic iodides, 167.
- Baumann, A., behaviour of zinc salts with plants and in the soil, 1408.
- Baumann, E., active oxygen, 14.
- cystine and cysteine, 1382.
- estimation of iodine in urine, 1423.
- formation of mercapturic acid in the organism and its detection in the urine, 1395.
- oxidation of carbonic oxide by air and moist phosphorus, 1092.
- Baumert, G., action of acetic chloride and anhydride on lupinine, 1387.
- the liquid alkaloids from *Lupinus luteus*, 1387.
- Baur, R., apparatus for the estimation of carbonic anhydride, 1216.
- test for available chlorine in bleach works and similar establishments, 775.
- Bauer. See also Kelbe.
- Jayley. See Morse.
- Beam, W., rocks of the Yellowstone Park, 28.
- v. Bechi. See Nölting.
- Becker, felspar, 716.
- Beckurts, H., detection of hydrocyanic acid, 222.
- method of testing butter for foreign fats, 778.
- volumetric determination of ammonia, 492.
- Becquerel, H., infra-red radiation spectra, 1.
- infra-red radiation spectra of metallic vapours, 1237.
- Behrend, R., action of carbamide on ethylic acetoacetate, 583.
- action of sulphonic chloride on secondary amines, 285.
- Behrend, G., Pasteurising barrelled beer, 789.
- Beilstein, F., investigation of petroleum, 500.
- petroleum testing, 369.
- Beilstein, F., and E. Wiegand, a new method of formation of pyrotartaric acid, 1123.
- Beketoff, lithium oxide, 1247.
- Bellamy, F., action of carbonic anhydride on lead acetate, 990.
- Bellenot. See Perkin.
- Bellmann, T., action of phosphorus pentachloride on amido-comenic acid, 840.
- Bellmer, H., secret anti-incrustators, 1087.
- Benckiser. See Nietzki.
- Bender, C., densities of solutions of salts, 251.
- specific gravity of normal salt solutions, 144.
- Benedikt, R., and K. Hazura, morin, 846, 1179.
- Benedikt, R., and P. Julius, diresorcinol and diresorcinol-phthalein, 1139.
- Bensemman, E., purification of hydrochloric acid, 259.
- Berend, L., dimethylquinaldine, 1053.
- dimethylquinoline, 1197.
- some new alkines, 1114.
- Berger, F., phenylcyanamide, 1157.
- Berglund, E., qualitative separation of tin, antimony, and arsenic, 777.
- Bergreen, R., and O. Licht, employment of magnesium sulphite and ferric chloride in sugar factories, 939.
- Beringer, J. J. and C., titration of copper by means of potassium cyanide, 113.
- Berju, G., derivatives of amidoazobenzene, 1148.
- Berlinerblau, J., muscarine, 1056.

- Bernhart. See Perkin.
 Bernheimer, O., derivatives of berberine, 340.
 — sparteine, 337.
 Bernthsen, A., acridines, 1356.
 — ammonium bases derived from acridine and quinaline, 1357.
 — juglone, 1365.
 — methylene-blue and allied colouring matters, 595, 1156.
 Bernthsen, A., and J. Traube, butylacridine and acridylbenzoic acid, 1183.
 Bert. See Varigny.
 Berthelot, absorption of gases by platinum, 702.
 — explosives, 540.
 — heat of formation of fluorides, 545.
 — law of thermochemical moduli or constants of substitution, 702.
 — reactions of carbon oxysulphide, 728.
 — scales of temperature and molecular weights, 804.
 — some mercuric salts, 706.
 — thermochemistry of haloid salts, 656.
 Berthelot and Guntz, absorption of chlorine by carbon, and its combination with hydrogen, 1249.
 — — reciprocal displacements of hydrofluoric and other acids, 703.
 Berthelot and Ilosvay, double salts formed by fusion, 704.
 Berthelot and Vieille, gaseous explosive mixtures, 709.
 — — influence of the density of explosive gaseous mixtures on the pressures which they develop, 805.
 — — relative rapidity of combustion of explosive gaseous mixtures, 804.
 Berthelot and Werner, bromine substitution, 883.
 Bertoni, G., and F. Truffi, preparation of ethereal salts by double decomposition, 1110.
 Bertrand, E., hübnerite from the Pyrenees, 406.
 — new selenium minerals from Cacheuta, 406.
 Besana, glacialin, 378.
 Bessler, O., and M. Märcker, effect of thick and thin sowing, and of the manuring on the yield of oats, 768.
 Beutnagel. See Burghard.
 Bevan. See Cross.
 Beyer, A., carbol, 331.
 Beyer, C., phenylhydroxyaceto-imido-ether and -amidine, 65.
 Bichat, E., and R. Blondlot, difference of potential of the electric layers of two liquids which are in contact, 383.
 Bidet. See Naudin.
 Biedermann, H., caffeine and its salts, 185.
 Biel, J., researches on Russian petroleum and petroleum-lamps, 936.
 Biny, behaviour of blood with ozone, 95.
 Birnbaum, R., action of organic acids on nickel-plated iron-vessels, 520.
 — composition of the water of the new mineral springs at Freyersbach, 1274.
 Bissinger, T., constituents of *Lactarius piperatus* and *Elaphomyces granulatus*, 480.
 Bizzarri, D., and G. Campani, attempts to obtain tartronic acid from glycerol and tartaric acid from erythrol, 297.
 Blaas, J., natural hydrous double sulphates, 1103.
 — roemerite, botryogen, and native magnesium iron sulphate, 269.
 Bladin, J. A., action of cyanogen on the toluidines, 1141.
 Blake, W. P., cassiterite, spodumene, and beryl from Dakota, 23.
 — metallurgy of nickel, 129.
 — native lead and minium in Idaho, 563.
 — new locality of chalcuite, 26.
 Blake, L. J., production of electricity by evaporation and electrical neutrality of vapour arising from the electrified surfaces of liquids, 243.
 Blank. See Knorr.
 Blockmann, R., phenolphthaleïn as indicator in estimating carbonic anhydride in gases, 1072.
 Bloem. See Baeyer.
 Blomstrand, C. W., a uranium mineral from Moss, 1102.
 Blondlot. See Bichat.
 Bloxam, C. L., barium and strontium in a boiler incrustation, 699.
 — detection of silver cyanide, 118.
 — reaction between mercuric cyanide and silver nitrate in presence of ammonia, 168.
 — reactions with silver cyanide, ferrocyanide, and ferricyanide, 118.
 — reduction of potassium ferricyanide by potassium cyanide, 35.
 — silver nitrocyanide, 168.
 Bodewig, C., estimation of boric acid in borosilicates, 871.
 Bodewig. See La Coste and Lunge.
 Böcker. See Meissl.

- Boehm, J., behaviour of vegetable tissues, starch, and charcoal towards gases, 1250.
- nature of the gases contained in vegetable tissues, 670.
- Boehme, E. P., investigations on the welding of iron, 786.
- Böhringer. See Koerner.
- Börnstein, E., anthracenecarboxylic acid from methylanthraquinone, 329.
- Böttger, H., action of sulphur on sodium mercaptide, 1282.
- constitution of the alkaline polysulphides, 1260.
- ethyl sulphides, 1282.
- polysulphides of sodium, 1260.
- Böttger, C., acetylation of gallic acid and tannin, 1178.
- action of aniline on pyrotartaric acid, 1006.
- action of phenol on ketonic acids, 55.
- aniluvitonic acid, 320.
- bark-tannins, 1025.
- condensation to pyridine-derivatives, 758.
- digallic acid, 1178.
- dipyrogallopropionic acid, 318.
- hemlock-tannin, 1025.
- oakbark tannic acid, 321.
- pyridine derivatives, 758.
- pyrotritaric acid, 993.
- relation between benzene and pyridene, 758.
- Bogomoletz, I., separation of strontium from calcium, 1077.
- Bohn, R., and K. Heumann, azophenols, 1014.
- Boillot, A., heat of combination of carbon and oxygen, 141.
- Boisbaudran, L. de, separation of gallium, 17, 158, 822.
- Bondonneau, L., estimation of moisture in amylaceous matters, 927.
- Boni, detection of the colouring matter of Campeachy wood in wine, 502.
- Bonnier, G., and L. Mangin, methods of studying the influence of light on the respiration of plants, 1066.
- — respiration of leaves in the dark, 857.
- — respiration and transpiration of fungi, 628.
- Bonnier. See also Tieghem.
- Booth, J. C., toughening gold and silver, 1445.
- Borgmann, E., determination of small proportions of alcohol in viscous liquids, 641.
- examination of spices, 642.
- ratio of glycerol to alcohol in beer, 641.
- Bornemann, E., Etard's reaction for the preparation of aromatic aldehydes, 1161.
- Bornträger, H., manufacture of sulphuric acid free from arsenic and selenium, 126.
- Borodin, J. A., crystallisable colouring matter in chlorophyll, 910.
- Bosshard, E., action of alkalis on amides, 878.
- determination of ammonia in vegetable juices and extracts, 373.
- Bosshard. See also Schulze.
- Bouchard, A., analyses of wines from Anjou, 646.
- Bouquet, C. L. de, preparation of di- and tri-calcium phosphates, 892, 1263.
- Bourboze, soldering aluminium, 961.
- Bourgeois, L., artificial reproduction of certain silicates and titanates, 564.
- Bourquelot, E., invertin, 983.
- physiological functions of maltose, 345.
- Bourquelot. See also Dastre.
- Bourquin, A., action of zinc chloride on salicylaldehyde and parahydroxybenzaldehyde, 1164.
- Boussingault, analyses of combustible minerals, 780.
- cocoa and chocolate, 202.
- contribution to a knowledge of mineral-fuel, 521.
- Boutelleau, absorption of nitrogen by Leguminosæ, 1401.
- Boutroux, L., fermentation of bread, 132.
- Bouty, E., electrical conductivity of dilute solutions, 881, 1241.
- Bradbury, C. M., topaz from Maine, U.S., 27.
- Brame, C., detection of hydrocyanic acid, 371.
- loss of nitrogen during the fermentation of farmyard manure, 1416.
- Brauns, F., action of aniline and toluidine on nitro- β -naphthaquinone, 1038.
- Brautlecht, J., microscopic examination of water for organic impurities, 221.
- Breneman, A. A., apparatus for the rapid analysis of gases, 213.
- coloured tubes for Nesslerising, 1072.
- estimation of carbon in cast-iron, 219.
- Brieger, L., preparation of phenol-sulphuric acid from urine, 1353.
- ptomaines, 1056, 1202.
- Brignone, G., analyses of the water of a thermal spring in the island of Pantelleria, 1106.

- Brögger, W. C., pitchblende and xenotime from Norway, 1101.
 Brögger, W. C., and G. Flink, crystalline form of beryllium, 1092.
 Brügelmann, G., estimation of thio-sulphuric acid, 492.
 Bruel, G., volumetric estimation of iron by means of sodium thiosulphate and salicylate, 367.
 Brümmer, white mustard as fodder, 864.
 Brukner, B., contributions to the more exact knowledge of the chemical nature of starch grains, 575.
 Brun, A., mineralogical notes, 402.
 Bruneau. See Rousseau.
 Brunel, O., β -ethylnaphthalene, 1035.
 Brunner, H., and C. Kraemer, action of nitrobromic acid on organic compounds, 1315.
 ——— amidophenolsulphonic acids and their relationship to Liebermann's colouring matters, 1354.
 ——— azoresorcinol and azoresorufin, 1333.
 Brunner, D. B., and E. F. Smith, minerals from Berks Co., Pa., 663.
 Brunton, T. L., and J. T. Cash, connection between chemical constitution and physiological action, 348.
 Brush, G. J., and S. L. Penfield, identity of scovellite and rhabdophane, 827.
 ——— scovellite, a new phosphate of didymium, yttrium, &c., 26.
 Bubnow, N. A., chemical constituents of the thyroid gland, 1060.
 Buchka, K., hæmatoxylin and brazilin, 1043.
 Buchner, G., action of ammonium sulphide on metallic pyrophosphates, 218.
 Buchstab, M., metazo- and hydrazo-phenetol, 1147.
 Bülow. See Knorr.
 Bürger. See Krafft.
 Büsgen, H., experiments with *Drosera rotundifolia*, 917.
 Bungener, H., the bitter principle of hops, 1366.
 Bungener, H., and L. Fries, nitrogenous combinations in barley, malt, and beer wort, 1446.
 Bunsen, R., condensation of carbonic anhydride by glass, 146.
 Burckhardt. See Lunge.
 Burgerstein, A., absorption of water by flower-petals, 1403.
 Burghardt and Beutnagel, parabromometabromobenzoic acid, 601.
 Burton, B. S., derivatives of benzil, 62.
 Busatti. See Funaro.
 Butlerow. See Rizzia.
 Byasson, H., assay of quinine sulphate, 1080.
- ### C.
- Cabella, A. G., derivatives of phenyl-cinnamic acid, 1348.
 Cailletet, production of low temperatures by the use of liquefied gases, 383, 656, 1248.
 Caldwell, G. C., volumetric estimation of phosphoric acid, 110.
 Calker, F. J. P., a peculiar kernel structure in fluorspar, 403.
 ——— corrosion faces of fluorspar, 403.
 Calm, A., action of aniline on resorcinol and quinol, 591.
 Calmels, G., constitution of some simple cyanogen compounds, 1277.
 Cameron, C. A., antiseptic experiments in a mortuary vault, 878.
 ——— manuring potatoes, 866.
 Campani. See Bizzarri.
 Campredon. See Gassend.
 Cannizzaro, S., products of the decomposition of santonous acid, 327.
 Canzoneri, F., thapsia resin, 460.
 Carles, P., estimation of alum in wine, 1077.
 ——— estimation of lead in tin plate, 1078.
 ——— souring of wine, 646.
 ——— wines from sugar, 1086.
 Carnelley, T., colour of chemical compounds, mainly as a function of the atomic weight of the component elements, 1252.
 ——— melting points of beryllium chloride and bromide, 962.
 Carnot, A., colorimetric estimation of gold, 17, 115.
 ——— new reactions of gold, 115.
 ——— origin and distribution of phosphorus in coal, 1270.
 ——— salts of aurous oxide; colorimetric estimation of gold, 17.
 Carnot, A., and Richard, crystallised calcium silicophosphate produced in the dephosphorisation of iron, 157.
 Carpentier, J., a mercury galvanometer, 949.
 Carpi, S., examination of olive oil, 931.
 Carsten, H. J., manuring of marshy land, 363.
 Casamajor and others, examination of cane-sugar and dextrose; decolorising dextrose solutions, 930.
 Cash. See Brunton.

- Cavazzi, G., analysis of a meteorite which fell at Alfianello, February, 1883, 276.
- estimation of bromine in presence of large quantities of chlorides, 215.
- Cazeneuve, P., formation of acetylene from iodoform, 418.
- formation of methyl iodide and methylene iodide from iodoform, 896.
- isomeric chloronitrocamphors, 1041.
- Cazeneuve, P., and Chapuis, purification of methylated spirit, 1085.
- Cercello, V., physiological action of paraldehyde, and contributions to the study of chloral hydrate, 199.
- Ceresole, M., benzoylacetone and isonitroso-benzoylacetone, 1167.
- Ceresole, M., and G. Koeckert, α - β -diisonitrosobutyric acid, 1120.
- Certes, A., influence of high pressures on putrefaction, 1399.
- Cesaro, G., crystallised voltzine, 1101.
- hydrated double silicate of zinc and aluminium, 1105.
- Cesaro, G., and G. Despret, richelite, a new mineral species, 1102.
- Chamberlain. See Austen.
- Chamberland, C., filter yielding physiologically pure water, 1440.
- Chance, A. M., Schafferer and Helbig's process for the recovery of sulphur, 228.
- Chandelon, T., studies on peptonisation, 1390.
- Chaper, occurrence of diamonds in a pegmatite in Hindostan, 563.
- presence of the diamond in an Indian pegmatite, 1269.
- Chaperon, G., a probable cause of the difference between the observed electromotive force of galvanic couples and that calculated from thermochemical data, 802.
- Chaperon. See also Lalande.
- Chapoteaut, P., a glucoside from *Boldoa fragrans*, 845.
- Chapuis. See Cazeneuve.
- Chastaing, action of bromine on pilocarpine, 468.
- Chechoukoff, action of chlorine on isobutylene, 1276.
- Chevreul, E., coexistence of ammonium carbonate and potassium sulphate in guano, 359.
- Chiappe, reaction of ashes from wine, 642.
- Chicandard, G., fermentation of bread, 235.
- Chittenden, R. H., distribution of arsenic in a human body, 349.
- Chittenden. See also Kühne.
- Christel, G., detection and estimation of trinitrophenol, 221.
- formation of sodium sulphate in bricks, 127.
- Christensen, O. T., oxides of manganese, 397.
- Ciamician, G. L., and M. Dennstedt, acetylpyrroline and pseudo-acetylpyrroline, 289.
- action of acetic anhydride and benzoic anhydride on pyrroline, 1044.
- α -carbopyrrolic acid, 1044.
- Ciamician, G., and P. Silber, action of alkaline hypochlorites and hypobromites on pyrroline, 1367.
- blue colouring matter from pyrroline, 740.
- derivatives of pyrocoll, 292.
- derivatives of succinimide, 1115.
- new methods for the formation of α -carbopyrrolic acid, 1193.
- pyrocoll, 176.
- synthesis of pyrocoll, 585, 725.
- Cimbal, O., and others, cultivation and yield of potatoes, 483.
- Claisen, L., action of aldehydes on ketones, ketonic acids, and malonic acid, 445.
- Claisen, L., and L. Crismer, action of benzaldehyde on malonic acid and its ethylic salt, 444.
- Claisen, L., and F. E. Matthews, reaction of ethyl acetoacetate with aldehydes, 443.
- Claisen, L., and A. C. Ponder, condensation of acetone with aromatic aldehydes, 1166.
- Clar, C., action of water containing carbonic anhydride on the trachyte of Gleichenberg, 569.
- Clarke, F. W., and C. S. Evans, antimony tartrates, 298.
- Clarke, F. W., and O. T. Joslin, phosphides of iridium and platinum, 400.
- Clarke, F. W., and E. A. Kebler, cadmium iodide, 394.
- Clark, J., separation of cobalt from nickel, 498.
- Claus, A., α -nitroanthraquinonesulphonic acid and its derivatives, 1040.
- Claus, A., and H. Howitz, aniline derivatives, 1005.
- Claus, A., and E. A. Merck, hydrocyanides of organic bases, 338.
- Claus, A., and C. Richter, action of phosphorus pentachloride and pentoxide on benzoyl- β -naphthylphenylamine and on benzoyl-di- β -naphthylamine, 1358.

- Claus, A., and P. Stegelitz, action of haloïd ethereal salts on quinoline, 1050.
- Claus, C. F., strontium hydroxide, 1224.
- Clemence, A. B., apparatus for estimating carbon in steel, 219.
- Cloëz, C., mineral water at Brucourt, 895.
- pentachloracetone, 580.
- Coale. See Remsen.
- Cobenzl. See Schmitt.
- Cobley, process for preparing a mineral white, 136.
- Cochin, D., action of air on beer yeast, 939.
- Cohen, E., jadeite from Thibet, 407.
- separation of alumina, ferric oxide, and titanio oxide, 640.
- Cohn, basic phosphate of lime as an addition to cattle fodder, 194.
- Cohn, S. H., process for preparing ochre-colours, 784.
- Cole. See Judd.
- Collin. See Nölting.
- Colson, A., a new glycerol, 57.
- derivatives of metaxylene, 1313.
- xylenes, 1000.
- Combes, A., action of chloraldehydes on benzene in presence of aluminium chloride, 837.
- Coney, A., phenylthienylketone, 1168.
- Comey. See also Michael.
- Comstock, W. J., and W. Koenigs, cinchona alkaloids, 1382.
- Comstock. See also Remsen.
- Coninck, O. de, action of pyridine bases on alcoholic iodides, 612.
- "Anderson's reaction," 612.
- coal-tar lutidine, 910.
- synthesis of pyridic hydrides, 1047.
- Conrad, M., and M. Guthzeit, action of α - β -dibromopropionic acid on ethyl malonate, 991.
- ethyl dicarbonditetracarboxylate, 297.
- Conroy, M., tincture of nux vomica, 946.
- Constam. See Goldschmidt.
- Cooke, J. P., method of correcting the weight of a body for the buoyancy of the atmosphere when the volume is unknown, 13.
- Coppola, F., transformation of the fluobenzoic acids in the animal organism, 446.
- Cossa, A., diffusion of didymium, 262.
- normal didymium molybdate and the valency of didymium, 821.
- presence of yttrium in the sphene of Biellese syenite, 158.
- Counciler, C., ash of leaves of plants grown in the earth under water-culture, 98.
- Couty, and others, effect of coffee on the composition of the blood and on nutrition, 1392.
- Cowardins, S. P., carboxyl iodide, 40.
- Crafts, J. M., expansion of elementary gases, 889.
- use of mercury thermometers with particular reference to the determination of melting and boiling points, 656.
- Crafts. See also Friedel.
- Crahé, and others, beet cultivation, 208.
- Crespi, P., solubility of strychnine and preparation of some of its salts, 187.
- Creutz, M. J., zinc from pyrites residues, 788.
- Crismer, L., estimation of iron and stannous salts by potassium chromate, 1078.
- liquid paraffin as a reagent for the presence of water in alcohol, ether, and chloroform, 1073.
- Crismer. See also Claisen.
- Crookes, W., radiant method spectroscopy, 241.
- Cross, C. F., and E. J. Bevan, hydroxycellulose and phenylhydrazine, 897.
- Cross, C. W., hypersthene-andesite, 568.
- Cross, W., and W. F. Hillebrand, minerals of the cryolite-group, recently found in Colorado, 21.
- Curie. See Friedel.
- Curtius, T., acetic acid, 1306.
- action of nitrous acid on ethyl glycocine hydrochloride, 42.
- diazo- and diazoamido-derivatives of the paraffin series, 987.
- general reaction for the amido-fatty acids, 994.
- synthesis of hippuric acid and hippuric ethers, 1347.
- Czapski, S., electromotive force in terms of chemical energy, 650.
- Czarnomski. See Kelbe.

D.

- Dabney, C. W., isopieramic acid, 308.
- Dafert, F. W., formation of mannitol from dextrose and lævulose, 720.
- Dana, C. M., digestive power of commercial pepsin, 471.

- Dana, E. S., stibnite from Japan, 22.
 Danilewsky, albuminoids, 1388.
 Darton, N. H., the ammonia process for water analysis, 696.
 Dastre, A., and E. Bourquelot, assimilation of maltose, 1392.
 Dathe, E., culm conglomerate containing variolite at Hansdorf, in Silesia, 408.
 Daubrée. See Websky.
 D'Avène, continuous cultivation with artificial manures, 490.
 Davis, G. E., new bye-product from coal distillation, 525.
 Day. See Remsen.
 Debray, H., a compound of rhodium, 400.
 Decaux, M., action of sunlight, daylight, and the arc-light on colours used in dyeing and painting, 700.
 De Cyon, E., borax as an internal disinfectant, 1440.
 De Forcrand, barium alcoholate, 4.
 — disodium glycollate, 548.
 — glycollide, 547.
 — heat of formation of alcoholates, 546.
 — normal and acid sodium sulphites, 803.
 — potassium and barium glyoxal-hydrogen sulphites, 989.
 — sodium alcoholates, 142.
 — transformation of glyoxal into glycollic acid, 898.
 De Gasparin, estimation of phosphoric acid in arable soils, 871.
 Degener, P., and others, separation of sugar from molasses, 1447.
 Degener. See also Stammer.
 Dehérain, P. P., assimilation of the organic matter by soils, 208.
 — effect of potassium and sodium nitrates on the growth of potatoes, 361.
 — fermentation of farmyard manure, 1412.
 — preparation of farmyard manure, 1412.
 — report on experimental plots at Grignon in 1882, 204.
 — sodium nitrate and ammonium sulphate as manures, 491.
 — stable manure, 924.
 — use of superphosphates, 925.
 Dehérain, P. P., and L. Maquenne, butyric fermentation excited by garden soil, 1063.
 — fermentation of cane-sugar in contact with arable soil, 351.
 Dehérain, P. P., and others, results of the experimental plots at Grignon in 1883, 1068.
 Delachanal, B., asphalt or bitumen of Judea, 231.
 De la Charlonny, P. M., hydrated aluminium sulphate, 820.
 Dela Croix, W., influence of dilution on the rate of chemical reactions, 1090.
 Demarçay, E., reactions of tellurium, 663.
 Denaro, A., dichlorovinyl methyl ether, 1282.
 Denaro. See also Oliveri.
 Dennig, A., determination of the rate of consumption of oxygen in the tissues by means of the spectroscope, 1391.
 Dennstedt. See Ciamician.
 De Regibus. See Pistone.
 Deros, A., detection and estimation of zinc and lead in presence of iron, 367.
 Derwin, E., phosphorus sulphides, 1258.
 — preparation of phosphorus oxychloride, 155.
 Des Cloizeaux, A., herderite, 827.
 — new mineral from Barbin, near Nantes, 408.
 — note on the optical properties of Nevada hübnerite, 407.
 — pachnolite and thomsenolite, 716.
 Despret. See Cesaro.
 Destrem, A., action of the induction spark on benzene, toluene, and aniline, 1243.
 Detmer, W., development of starch-transforming ferments in the cells of the higher plants, 917, 1063.
 — formation of diastatic ferments in the cells of the higher plants, 1402.
 Dettweiler, A., cost of production of stable manure, 637.
 De Vries, H., attraction between soluble substances in dilute solutions and water, 1065.
 — part played by vegetable acids in causing the turgescence of cells, 1064.
 Dewar, J., and A. Scott, molecular weight of the amines, 257.
 Dezaunay. See Andouard.
 Dietrich, uncorticated cotton-seed meal, 100.
 Dieulafait, occurrence, association, and probable mode of formation of barytes, celestine, and anhydrite, 25.
 — origin of phosphorites and ferruginous clays in limestone, 1272.
 — manganese in the cipolin marbles of the primary formation, 716.
 — rubidium, caesium, lithium, and boric acid in Chili saltpetre, 968.

- Ditte, A., action of cupric sulphide on potassium sulphide, 963.
 — action of hydrochloric acid on stannous sulphide, 18.
 — action of mercuric sulphide on potassium sulphide, 964.
 — action of potassium sulphide on mercuric sulphide, 893.
 — production of crystalline borates, 711.
 — uranium compounds, 824.
 Dittmar, W., nickel alkali-proof vessels, 1071.
 Divers, E., and T. Shimidzu, red sulphur of Japan, 291.
 Divers, E., and M. Shimosé, lead chamber deposit from Japanese sulphuric acid, 392.
 Dobbie, J. J., and G. S. Henderson, red resins known as dragon's blood, 462.
 Doebner, O., and W. v. Miller, homologues of quinaldine, 1374.
 — — quinaldine bases, 183, 1373.
 — — quinaldicarboxylic acids, 1200.
 — — α -quinolinecarboxylic acid, 185.
 Doelter, C., synthesis of pyroxene, 1105.
 Doelter, C., and E. Hussak, action of fused magmas on various minerals, 401.
 — — — — — synthetical mineral studies, 565.
 Dollfus, A., new mode of treating casein, 1449.
 Donald, J. T., samarskite from Berthier Co., Quebec, 894.
 Donath, E., imitation of patina, 1444.
 Donath. See also Schoffel.
 D'Orval, E., and A. Pagnoul, salt and herring offal as manure, 866.
 Dralle, C., hæmatoxylin and brazilin, 1043.
 — — — — — oxidation of purpurin, 1040.
 Drechsel, E., electrolysis of phenol, 1136.
 Drew. See Graebe.
 Drewsen. See Baeyer.
 Dreyfus, E., estimation of the total nitrogen in manure, 639.
 Dryer, C. K., brucine as a test for tin, 498.
 Dubois, R., preservative effect of ether and chloroform vapour on organic substances, 932.
 Duclaux, E., milk, 762.
 Ducretet, apparatus for collecting solid carbonic anhydride, 1253.
 Dürkopff, E., aldehydecollidine hexahydride, 1054.
 Dugast, commercial assay of native phosphates, 1075.
 — — — — — contribution to the chemical study of soils, 677.
 Duisberg. See v. Pechmann.
 Dumas, history of the preparation of artificial sodium carbonate from common salt, 16.
 Dunstan, W. R., action of polyhydric alcohols on borax, 278.
 Dupetit, G., poisonous properties of edible fungi, 204.
 Dureau, G., and Pellet, sorgho sugar-making in America, 699.
 Duvillier, E., amidated acids of α -caproic acid, 664.
 — — — — — creatine and creatinines, 613.
 Duvillier, E., and H. Malbot, action of ammonia gas on methyl nitrate, 577.
 Dyer, B., comparison of dissolved and undissolved phosphates, 774.
 Dymond, T. S., pure benzoic acid from urine, 904.
 Dyson, S., examination of gas liquor, 928.

E.

- Ebell, P., similarity of behaviour of ultramarine in a very fine state of division to that of metallic sulphides in the colloidal state, 147.
 Eberhard, A., the meteorite of Sewrjukowo, 417.
 Effront, J., isomeric isobutylorth-amidotoluenes, 899.
 Egger, E., contribution to a knowledge of rye grain, 532.
 Ehrenberg, A., experiments on mercury fulminate, 419.
 Einhorn, A., condensations with orthonitrocinnamaldehyde, 1345.
 — — — — — derivatives of orthonitrocinnamic acid, 65.
 — — — — — hydroxydihydrocarbostyryl, 1338.
 — — — — — orthonitrophenyl- β -alanine, 304.
 — — — — — preparation of orthonitrobenzaldehyde, 744.
 Einhorn, A., and W. Hess, β -lactone of isopropylnitrophenyllactic acid, 1351.
 Einhorn, A., and G. Prausnitz, etherification of the three isomeric nitrophenyl- β -lactic acids, 1351.
 Ekstrand, A. G., derivatives of naphthoic acid, 1360.
 — — — — — dioxyretistene, 1041.
 Elbs, K., amido-derivatives of triphenylmethane, 1031.
 — — — — — reactions of triphenylmethyl bromide, 1080.

v. Ellenberger and V. Hofmeister, digestive fluid and digestive power of the horse, 92, 472.
 ——— effects of copper on the organism of ruminants, 474.
 Elliot, A. H., apparatus for the rapid analysis of gas, 214.
 Elster, J., and H. Geitel, electricity of flames, 1238.
 Emmerling, A., contributions to a knowledge of chemical processes in the plant, 670.
 ——— manuring experiments at Kiel, 211.
 ——— presence of mildew, &c., in cattle foods, 1411.
 ——— valuation of fodder, 100.
 Emmerling, A., and G. Loges, different soils rich in humus and their behaviour with water, 632.
 Emmerling, and others, manuring of grain, 1213.
 Emo. See Pagliani.
 Enckhausen, manuring with sea-mud and peat compost, 867.
 Engel, R., formulæ of certain ammonium salts, 729.
 ——— new group of nitrogen-compounds, 725.
 Engelsing, H., preparation of anthraquinone-compounds, 945.
 Engler, K., utilisation of human excreta, 1418.
 Engler. See also Strippelmann and Weigelt.
 Erdmann, H., constitution of phenylparaconic acid, 906.
 ——— phenylisocrotonic acid and nitric acid. Phenylnitroethylene, 906.
 Erlenmeyer, E., constitution of methylene-blue, 595.
 Errera, G., action of chlorine on boiling cymene, 300.
 ——— glycogen in plants, 354.
 Eschellmann, G., loss of nitre in the manufacture of sulphuric acid, 1222.
 Étard, A., conversion of hydrocarbons into aldehydes by the action of chromyl dichloride, 312.
 ——— solubility curves of salts, 807.
 ——— hydronicotine and oxytrinicotine, 464.
 ——— solubilities of haloïd salts, 960.
 ——— solubility of salts, 887.
 Étard. See also Gautier.
 Etteckel, and F. Schlagdenhaufen, bark of "Bois piquant," 848.
 Etti, C., behaviour of tannin and oak-bark tannin towards various reagents, 1355.
 Eustis, W. C., chrysocolla from Arizona, 28.

Eustis, W. C., gibbsite from Brazil, 23.
 Evans. See Clark.
 Everhart. See Leeds.
 Ewald, E., and C. F. W. Kruckenberg, guanine in fish, 623.
 Eymonnet, L., elimination of hypophosphites by the urine, 1058.
 ——— occurrence of glycerolphosphoric acid in the urine, 1058.
 Eyster, G. S., determining left-handed rotation with the Scheibler-Ventzke-Soleil polariscope, 691.

F.

Falières, E., rapid estimation of nitrates, 1074.
 ——— volumetric estimation of carbon bisulphide in thiocarbonates, 1077.
 Farsky, F., action of sulphuric acid as a manure, 775.
 ——— influence of superphosphates on the quality of the crop, 360.
 ——— manuring with potash, 774.
 Fauconnier, A., second anhydride of mannitol, 1111.
 Fauconnier, A., and others, new derivative of mannitol, 573.
 Faulenbach, C., estimation of starch and glucose in food, 930.
 Fernandez, P., arsenovanadic acid, 1266.
 Ferrari, P., trustworthiness of Berthelot and Fleurieure's method for the estimation of tartaric acid, 371.
 Festing. See Abney.
 Fiala, F., mixed ethers of quinol, 1138.
 Figuier, A., compounds obtained by means of gas batteries and the silent discharge, 1242.
 Filehne, kairine and kairolin, 474.
 Fileti, M., synthesis of scatole, 458.
 ——— transformation of scatole into indole and preparation of indole, 458.
 Filhol, E., and Senderens, action of sulphur on oxides, 959.
 Fino, V., rhodonite from Viù, 164.
 Fischer, Silesian farm without cattle, 636.
 Fischer, B., diazoamidobenzene, 1014.
 Fischer, E., diacetoneamine, 53.
 ——— formation of methylene-blue as a reaction for hydrogen sulphide, 109.
 ——— phenylhydrazine, a reagent for aldehydes and ketones, 1150.
 ——— triacetoneamine and its homologues, 1290.
 ——— uric acid, 996, 1308.
 Fischer, E., and O. Hess, synthesis of indole-derivatives, 1180.

- Fischer, E., and F. Jourdan, hydrazines of pyroracemic acid, 52.
- Fischer, E., and H. Koch, trimethylenediamine, 1289.
- Fischer, E., and H. Kuzel, benzoyl-acetone, 59.
- hydrazines of cinnamic acid, 440.
- Fischer, E., and L. Reese, caffeine, xanthine, and guanine, 466.
- Fischer, F., an evaporation experiment, 510.
- application of electricity in chemical industry, 785, 933.
- illuminating gas and gas engines, 508.
- influence of artificial lighting on the atmosphere of dwellings, 122.
- retort furnaces with gaseous fuel, 509.
- Fischer, O., and G. Körner, chrys-aniline, 748.
- derivatives of quinolinemeta-carboxylic acid, 1197.
- new method for producing acridine, 748.
- violet derivatives of triphenyl-methane, 606, 749.
- Fischer, O., and C. A. Willmack, paraquinolinesulphonic acid and its homologues, 1051.
- Fischer, O., and H. v. Loo, formation of diquinoline, 1372.
- Fischer, O., and E. Renouf, derivatives of hydroxypyridine from pyridinesulphonic acid, 1370.
- derivatives of orth-hydroxy-quinoline, 1370.
- derivatives of quinoline and pyridine, 1048.
- Fischer, O., and C. Schmidt, condensation-products of aromatic bases with aldehydes, 1315.
- Fittica, A., a fourth monobromophenol, 55.
- Fittig, R., lactones, 744.
- Fittig, R., and F. Roeder, a new acid isomeric with crotonic acid, 295.
- Fitz, A., *Bacillus butylicus*, 765.
- schizomycetic fermentation, 1062.
- Fjord, N., comparison of various systems of butter-making, 135.
- comparison of cream separators, 1447.
- Flechsigs, E., composition of lupines, 1405.
- Fleischer, E., on desiccators, 491.
- Fleischer, M., analysis of peat litter, 925.
- comparison of peat and straw litter, 1418.
- kainite as potato manure, 108.
- Fleischer, M., manurial value of sewer slime, 107.
- Fleischer, M., and others, moss and turf-fibre as cattle litter, 105.
- sea-mud, 106.
- Fleischer. See also Penzoldt.
- Fleischmann, W., preserved butter, 534.
- Fleischmann, W., and Blunck-Schilkowitz, butter-making, 534.
- Fleischmann, W., and R. A. Sachtleben, experiments with Nielsen and Petersen's centrifugal separator, 135.
- Fleischmann, W., and others, estimation of fat in skim-milk, 1435.
- Fleischmann. See also Martiny.
- Fleissner. See Lippmann.
- Flessa, R., derivatives of naphthalene, 1185.
- Fletcher, L., dilatation of crystals on change of temperature, 1096.
- Fletcher, T., coal-gas as a source of heat, 697.
- Flight, W., meteorite at Alfanello, 276.
- the Cranbourne meteorite, 416.
- the Rowton and Middlesbrough meteorites, 977.
- Flight. See also Foullon.
- Flink. See Brögger.
- Flückiger, F. A., caraway oil, 1138.
- Föhr, C. F., chemical composition of the phonolites of Hegau, 568.
- Fölsing, A., action of hydrobromic acid on the ethereal salts of hydroxy-acids, 897.
- boiling points of the ethereal salts of glycollic and salicylic acids, 897.
- Förster, W. v., experiments with compressed gun-cotton, 948.
- Förstner, H., the felspars of Pantelleria, 1104.
- Folkard, C. W., molecular calcium compounds, 892.
- Folkers, B., utilisation of skim-milk, 534.
- Forbes, J. D., Colorado beetle, 350.
- Forney, M., action of iodine pentabromide on essential oils, 370.
- Forrer, C., derivatives of phenylacetaldehyde, 1020.
- indirubin, 1028.
- Forster, J., use of boric acid for preserving food, 782.
- Forster, W. S., preparation of hop extract, 800.
- Fossek, W., a derivative of isobutaldehyde analogous to hydrobenzoin, 37.
- action of phosphorus trichloride on aldehydes, 833.

Fossek, W., preparation of isobutaldehyde free from acetone, 37.
 — synthesis of dihydric alcohols from mixtures of aldehydes, 832.
 Foullon, H. v., the crystalline schists of Kaisersberg, in Styria, 412.
 Foullon, H. v., and W. Flight, the Alfanello meteorite, 976.
 Fourquignon, L., decomposition of white-iron by heat, 1444.
 Fousseureau, G., electrical conductivity of distilled water, 1241.
 — electrical resistance of insulators, 245.
 Fox. See Wanklyn.
 Francksen, A., derivatives of propylphenylamine, 1007.
 Frank, A., bromine as a disinfectant, 512.
 — process for the recovery of slag, 1226.
 Frankel, A., and J. Geppert, effects of rarefied air on the animal organism, 470.
 Freda, G., mineralogical notices, 272.
 Fremery, M., arsenotungstic acid, 965.
 Frenzel, A., allocasite, 266.
 — rezbanyite, a new mineral species, 266.
 — turquoise found at Alexandria, 269.
 Fresenius, H., and Stocks, sulphuric acid as a manure, 926.
 Fresenius, R. and W., detection of adulteration in Portland cement, 876.
 Fresenius, W., arsenic in glass, 220.
 Freund, M., malonic acid, 728.
 — malonic and tartronic acids, 1123.
 Freytag, C., and Becke, feeding horses on earth-nut meal, 100.
 Friedel, brucite of Cogné, Vale of Aosta, 162.
 Friedel, C., combustion of diamonds, 1090.
 Friedel, C., and J. M. Crafts, action of methylene chloride on toluene and benzene, 1312.
 Friedel, C., and J. Curie, pyroelectricity of blende, sodium chlorate, and boracite, 3.
 Friedel, C., and E. Sarasin, formation of albite in the wet way, 163.
 Friedländer, E., derivatives of α - and β -naphthols, 79.
 Friedländer, P., paramidobenzyl cyanide, 737.
 Friedländer, P., and C. F. Göhring, orthamidobenzaldehyde, 1019.
 Friedländer, P., and S. Wleügel, constitution of anthranil, 61.
 Fries. See Bungener.

Frzsche, P., nitro-derivatives of paracresyl benzylether, 1337.
 Fritsch. See Baeyer.
 Frölich, E., derivatives of pseudocumidine, 1318.
 Frölich, O., action of bromine on nitric oxide, 1257.
 Frost, O. J., estimation of arsenic, Pearce's process, 116.
 Früh, J. J., morphology and chemistry of natural and artificial ulmin, 923.
 Fürth, A., isonitroso-acids, 42.
 Fürth, H., cochineal dye-stuffs, 84.
 Funaro, A., and L. Busatti, chemico-mineralogical studies on Italian minerals, 270.
 Funaro. See also Sestini.

G.

Gabel, D., composition of cow's milk in Holland, 1396.
 Gabriel, S., condensation-products from phthalic anhydride, 1176.
 — phthalacene-derivatives, 1189.
 Gaines, R. H., liquid nitrous anhydride, 15.
 Gal, H., action of zinc ethyl on amines and phosphines, 985.
 Garbe, P., Joule's law, 881.
 Gardiner, W., function of tannin in vegetable cells, 1209.
 Garnier, L., standard soap solution, 1072.
 Garzarolli Thurnlackh, K., action of zinc ethyl and zinc methyl on chlorinated aldehydes, 1118.
 Garzarolli-Thurnlackh, K., and A. Popper, action of zinc propyl and zinc isobutyl on butyl chloral, 1117.
 Gasiorowski. See Merz.
 Gaskell, H., and F. Hurter, preparation of sodium bicarbonate, 712.
 Gassend and Campredon, estimation of phosphoric acid in manures, 217.
 Gastine, detection and estimation of small quantities of carbon bisulphide in air, gases, &c., 1431.
 Gattermann, L., and H. Hager, action of ethylene bromide on nitraniline and on nitrotoluidine, 1142.
 Gautier, A., and A. Étard, acid products of the bacterial fermentation of albuminoids, 188.
 — observation on the poison of batrachians, 764.
 — products of the bacterial fermentation of albuminoids, 89.

- Gavazzi, A., estimation of iodine in presence of chlorine and bromine, 366.
- reactions of gaseous hydrogen phosphide, 155.
- Gawalowski, A., an indicator showing the neutral point in alkalimetry and acidimetry, 363, 1215.
- Gayon, U., fermentation of manure, 773.
- Gebhardt, W., secondary amines, 1320.
- Geigy. See Koenigs.
- Geikie, A., the supposed pre-Cambrian rocks of St. David's, 411.
- Geitel. See Elster.
- Gent, J. F., employment of maize in brewing, 527.
- Genth, F. A., alteration of orthoclase into albite, 273.
- alteration of talc into anthophyllite, 272.
- artificial alisonite, 266.
- beryl and allanite from Alexander Co., N.C., 274.
- corundum, 267.
- gahnite, 268.
- kupfernickel, from Colorado, 266.
- pyrophyllite in anthracite, 273.
- rutile and zircon from the itacolumite of Edge Hill, 270.
- talc pseudomorphous after magnetite, 273.
- zinc blende and prehnite from Cornwall, Lebanon Co., Pa., 266.
- Genzken. See Michaelis.
- Geppert. See Frankel.
- Gerber, M., Pinet's hypothesis, 550.
- Gerber. See also Rosenstiehl.
- Gernez, D., crystallisation of sulphur, 889.
- duration of the solidification of superfused sulphur, 553.
- solidification of superfused sulphur, 389.
- Gerssdorff, maize as food for horses, 355.
- Geuther, A., a new ethylic phosphate, 1282.
- action of phosphorus trisulphide on phenols, 54.
- calcium oxysulphides, 1263.
- compounds of sulphurous anhydride, 1256.
- constitution of ethylic acetoacetate and benzene, 836.
- constitution of polysulphides and polyoxides, 1260.
- a new derivative of mannitol, 36.
- yellow and red lead monoxide, 824.
- Gevekoht, H., the three nitracetophenones, 445.
- Giacosa, P., albuminoids of the vitreous humour of the human eye, 198.
- composition of the egg and its envelopes in the common frog, 198.
- existence of germs in the air at great heights, 225.
- transformation of nitriles in the organism, 1061.
- Gibbs, W., researches on the complex inorganic acids, 161, 560, 713.
- Gilbert. See Lawes.
- Girard, A., destruction and utilisation of the bodies of animals which have died from contagious diseases, 106.
- formation and accumulation of saccharose in the beet, 476.
- phosphine derivatives of the aldehydes, 1118.
- quality of the flour obtained by various methods of grinding, 1447.
- Girardin and others, phylloxera and insecticides, 481.
- Giurleo, P., quinine phenolsulphonate, 339.
- Gladding, T. S., reverted phosphoric acid, 1075, 1424.
- Gladstone, J. H., and A. Tribe, electrolysis of dilute sulphuric acid and hydrated salts, 654.
- Glaser, L., forest as a protection against hailstorms, 632.
- separation of arsenic from saline solutions, 1083.
- Glock. See Liebermann.
- Gnehm, R., chlorobenzaldehyde and chlorindigo, 1028.
- Godefroy, L., combined action of potassium dichromate and chlorine on ethyl alcohol, 660.
- double chlorides of chromium, 1266.
- Göhring. See Friedländer.
- Goldberg, A., estimation of nitrogen in nitro-azo- and diazo-compounds, 364.
- Goldschmidt, H., action of hydroxylamine on diketones, 62.
- carbol, 1138.
- nitrosophenols, 735, 1137.
- Goldschmidt, H., and E. J. Constant, pyridine bases from coal-tar, 611.
- Goldschmidt, H., and H. Schmid, nitrosophenols, 1327.
- orthonitrosophenols, 1359.
- Goldschmidt, H., and R. Zürer, camphor, 1364.
- Goldschmidt, G., papaverine, 186.
- Gonnard, F., anorthitic rock at Saint-Clement, Puy de Dôme, 411.
- formation of zeolites in the cold, 405.

- Gonnard, F., vaugnerite at Irigny, 405.
 — zeolites in the dolerites of Chaux-de-Bergonne, 829.
- Goppelsroeder, F., application of electrolysis in preparing indigo-vats, 942, 1448.
- Goppert, H. R., means of protecting plants against frost, 1067.
- Gorceix, H., green mica in the quartzites of Ouro Preto, 408.
- Gore, G., absorption of an iodine-compound by aluminium, 655.
 — reduction of metallic solutions by means of gases, &c., 393.
- Görgeu, A., artificial production of rhodonite and tephroite, 164.
 — artificial production of spessartite or manganese-garnet, 410.
 — artificial pseudomorphism of silica, 895.
 — calcium oxychloride, silicates, and chlorosilicates; artificial production of wollastonite, 1262.
 — manganese chlorosilicate 562.
- Gossin, E., action of isobutyl chloride on benzene, 1312.
- Gottlieb, E., composition of certain kinds of wood, 477.
- Gottstein, L., analysis of an English bottle-glass, 1443.
- Gousiorowski, K., and V. Merz, nitriles and carboxylic acids from aromatic amines, 734.
- Graebe, C., acridine, 607.
 — detection of nitrogen in organic compounds, 1072.
 — formation of acridine, 1182.
 — synthesis of anthraquinoline, 759.
- Graebe, C., and A. Drew, dinitro- β -naphthol, 1035.
- Graebe, C., and P. A. Guye, hydrides of naphthalene, 608.
- Graebe, C., and A. Pictet, methylphthalimide, 1019.
- Graebe, C., and B. Zschokke, thiophthalic anhydride, 1025.
- Graeff, F., naphthalene derivatives, 80.
- Gramont, A. de, action of aldehyde on propyl glycol, 35.
- Green, A. G., and S. Rideal, new volumetric method for the estimation of nitrous acid, 870.
- Greene, W. H., estimation of urea, 507.
- Greger, M., a hydrometer for demonstrating alterations in weight in chemical changes, 1253.
- Gréhan and Quinquaud, estimation of chloroform in the blood of an anæsthetised animal, 375.
 — — — poisonous action of urea, 1398.
- Grewingk, C., iron containing nickel from Sanarka, in the Ural Mountains, 401.
- Griess, P., diazo-derivatives, 1148.
 — introduction of the diazo-group into so-called aromatic para-compounds, 1013.
- Griffiths, A. B., aldehydic nature of protoplasm, 202.
 — analysis of the brine-spring of Stoke Prior, Worcestershire, 165.
 — chlorophyll; a compound of iron with a glucoside, 848.
 — excretory product from the liver of the cuttle fish, 94.
 — farmyard manure, 1070.
 — guano recently discovered in Australia, 107.
 — paraffin-shale from Servia, 879.
 — phenol in the stem, leaves, and cones of *Pinus sylvestris*, 863.
- Grimaux, E., a nitrogenous colloïd derived from amidobenzoic acid, 905.
 — coagulation of colloïds, 1250.
 — colloïdal derivatives of ferric hydroxide, 966.
 — colloïds, 957.
 — ferric ethylate and colloïdal ferric hydrate, 573.
 — some reactions of albumin, 911.
- Griveaux, F., electrochemical energy of light, 382.
- Groddeck, A. v., the kersantite vein of the Upper Harz, 409.
- Grodzki, M., occurrence of valerolactone in pyroligneous acid, 1118.
- Groschaus, J. A., aqueous solution, 143.
- Grossmann, M., bismuth subnitrate, 1092.
- Groth, P., natural fluorine compounds, 265.
- Gruber, M., elimination of nitrogen in the free state from the animal body, 1391.
 — Volhard's volumetric estimation of the chlorides in urine, 1424.
- Guareschi, I., naphthalene-derivatives, 842.
 — localisation of arsenic in the case of poisoning, 199.
- Guareschi, I., and A. Mosso, ptomaines, 618.
- Guareschi, I., thioaldehyde and carbaveraldine, 294.
- Guérin. See Lépine.
- Guimaraes, nutrition of dogs, 344.
- Gunter, E., bromoxylic acid and hydroxyxylic acid, 1347.
- Guntz, heat of formation of antimony oxychlorides, 707.
 — heat of formation of chlorides, 545.

- Guntz, heat of formation of potassium chlorides, 5.
 — guano from Aves Island, 489.
 — hydrogen potassium fluoride in solution, 704.
 — sodium fluorides, 546.
 — thermochemical researches on fluorine compounds, 1245.
 — thermochemical study of hydrofluoric acid, 544.
 — thermochemistry of antimony fluoride, 884.
 — transformation of prismatic antimony oxide into the octahedral oxide, 894.
 Guntz. See also Berthelot.
 Guradze, S., artificial manures in potato-growing, 102.
 Guradze - Kottulin, and others, potato culture, 483.
 Guthzeit. See Conrad.
 Guyard, A., action of air on solutions of tannin, and the estimation of tannin, 1438.
 — detection of manganese in commercial zinc and calamine; detection of bismuth in lead, 368, 640.
 — employment of boric acid on hæmatin in alkalimetry, 638.
 — estimation of ammoniacal nitrogen in soils, 1423.
 — estimation of calcium in presence of aluminium, iron, magnesium, and phosphates, 1427.
 — furfuraldehyde, 1304.
 — nitrogen iodide, 152, 818.
 — preparation of concentrated nitromolybdic acid solution, 638.
 — synthesis of tartaric glucoside, 1304.
 Guye. See Graebe.
 Gylling, H., new locality for andesine at Orijärvi, in Finland, 970.

H.

- Haarmann and Reimer, preparation of vanillin, 1343.
 Habermann, J., arbutin, 175.
 — basic sulphates, 151.
 — diethyl alizarin ether, 1187.
 Habermann, J., and M. Honig, action of cupric hydroxide on sugars, 1111.
 Hager, H., examination of copaiba balsam, 377.
 — examination of fatty almond-oil, 120.
 — examination of potash, 928.
 — test for bismuth subnitrate, 116.
 Hager. See also Gattermann.
 Hague, A., and J. P. Iddings, volcanoes of Northern California, Oregon, and Washington, 28.
 Haitinger. See Lieben.
 Haller, S., action of alcohol on diazo-compounds, 1322.
 — isomeric campholurethanes, 755.
 Hammerbacher, F., influence of pilocarpine and atropine on lactation, 1396.
 Hanriot, conversion of brucine into strychnine, 88.
 Hanriot and Guilbert, action of bromethylene on benzene in presence of aluminium chloride, 733.
 Hansemann, G., diffusion of gases through a porous septum, 1251.
 Hansen, E. C., organisms in the air around Carlsberg, 126.
 Hansen, C., and others, cheese from skim-milk, with foreign fats added, 942.
 Hansen. See also Schrodtt.
 Hantzsch, A., constitution of pyridine, 1193.
 — decomposition-products of the pyridine series, 1045.
 Happ, J., paraquinolinesulphonic acids, 757.
 Harnack, E., estimation of iodine in human urine, 1423.
 Hart, E., piscidin, the active principle of Jamaica dogwood, 332.
 Hartley, W. N., line spectra of boron and silicon, 242.
 — photographic investigations of the ultra-violet spark-spectra emitted by metallic elements and their combinations, under varying conditions, 137.
 — self-purification of peaty waters, 781.
 Hartley. See also Moritz.
 Hartshorn. See Jackson.
 Hartz and others, American red clover, 920.
 Harz, C. O., champion spice, 865.
 Hassack. See Arche.
 Haussner, G., Minjak-Lagam balsam, 354.
 Hautefeuille, P., and J. Chappuis, action of the silent discharge on oxygen and nitrogen in presence of chlorine, 710.
 Hautefeuille, P., and A. Perry, phosphoric anhydride, 1258.
 Hayduck, L., utilisation of malt combs in the manufacture of pressed yeast, 790.
 Hayem, G., poisons and drugs which act on hæmoglobin, 764.
 Hazard, J., estimation of quartz in siliceous rocks and soils, 872.

- Hazura, K., and P. Julius, resorcinol oxide, 1139.
- Hazura. See also Benedikt.
- Heaton, C. W., zinc in drinking water, 697.
- Heckel, E., and F. Schlagdenhaufen, chemical investigation of the kola-nut, 863.
- Heckmann, J., ethylic dinitrophenyl-acetoacetate, 178.
- Heffter, A., paramidotoluene ortho-sulphamide, 73.
- paramidotoluene-orthothiosulphonic acid, 454.
- Hehner, O., analysis of beeswax, 779.
- Heiden, E., and others, how to bring heavy raw soils into cultivation, 1412.
- potatoes with lime as a manure, 1419.
- ratio of nitrogen to phosphoric acid in seeds, 1404.
- Heinzelmann, G., fermentation experiments with gluten instead of diastase in the mash, 789.
- influence of salicylic acid on fermentation, 764.
- strong yeast, 789.
- Heinzerling. See Moldenhauer.
- Held, A., ethylic ethylacetocyanacetate and methylacetocyanacetate, 727.
- Hell, C., determination of the molecular weight and atomicity of the higher fatty alcohols, 1433.
- Hell, C., and E. A. Kehler, action of bromine on levulinic acid, 1297.
- Hell, C., and A. Ritter, action of the haloïd acids on wormseed oil, 1363.
- Hell, C., and H. Stürcke, wormseed oil, 1363.
- Hellriegel, influence of the amount of soil on the development of roots of various plants, 626.
- influence of constant temperature in the soil on plants, 916.
- influence of light and heat on plants, 855, 1206.
- influence of water on the growth of plants, 1401.
- plants from seed of various sizes, 352.
- Hellriegel and others, researches on sugar-beet, 485.
- Helms, A., cinchocerotin, 331.
- Hemilian, W., diphenylparaxylylmethane and its products of oxidation, 321.
- Hemilian, W., and H. Silberstein, triphenylamidomethane, 1032.
- Hempel, W., influence of the chemical nature and pressure of gases on the generation of electricity by an induction machine, 791.
- Henderson. See Dobbie.
- Henecke, A., extractive matter in Tyrolese wine, 1882 vintage, 130.
- Henke, G., colocynthin, 181.
- Henneguy and others, phylloxera, 99.
- Henninger, A., reduction of erythrol by formic acid, 897.
- Henningsen. See Barth.
- Henrichsen. See Wleügel.
- Henry, L., action of iodine chloride on monobromomethylene, 830.
- action of iodine chloride on monochlorethylene, 719.
- derivatives of mannite hexylene, 33.
- distinct types of glycollic acid, 730.
- haloïd derivatives of ethane, 571.
- methylene bromide, 718.
- monobromomethylchloroform (bromotrichlorethane), 978.
- monochlorethyl monochloracetate, 421.
- propargyl iodide, 979.
- unsymmetrical chloriodethylene and bromiodethylene, 830.
- Hentschel, W., action of sulphuric acid on carbanilide, 1016.
- preparation of acid anhydrides, 991.
- preparation of carbamide, 995.
- preparation of monochloracetic acid, 990.
- preparation of phenyl cyanate, 1002.
- Henzold. See Kreusler.
- Hermans, J. T. H., contamination of the atmosphere by products of respiration, 510.
- Herter. See Holdefleiss.
- Herth, R., hemialbumose or propetone, 1388.
- Hertz, H., benzene as an insulator, 244.
- Herzfeld, A., gluconic acids from different sources, 423.
- maltose, 171.
- Herzfeld, J., derivatives of toluquinoline, 1198, 1199.
- Herzig, J., quercetin and its derivatives, 846.
- Hesemann, F., and L. Köchler, metabromometanitrobenzoic acid and its derivatives, 599.
- Hess. See Fischer.
- Hesse, O., morphine, 613.
- pseudo-morphine, 616.
- quinine and homoquinine, 1384.
- quinone, 430.
- trimethylamine aurochloride, 577.
- Heumann. See Bohn.
- Heusser, E., process for preparing hydrocarbons, 788.

- Heydenreich, L., sterilisation of liquids by means of Papin's digester, 864.
- Hildebrand, F., influence of weather on vegetation, 856.
- Hilditch, T., atomic weight of oxygen, 659.
- Hilgenstock, G., dephosphorisation of iron, 520.
- Hill, H. B., action of alkalis on mucobromic acid, 731.
- Hill, H. B., and C. R. Sanger, substitution-derivatives of pyromucic acid, 1305.
- Hillebrand, W. F., löllingite and other minerals from Colorado, 826.
- Hillebrand. See also Cross.
- Illinsberg, O., quinoxalines, 1052.
- Hjelt, E., identity of isopropylsuccinic acid with pimelic acid, 296.
- pyrotartrylfluorescein, 1019.
- reduction of pyrotartaric chloride, 297.
- Ilava, J., formation of fibrin, 912.
- Hock, K., coloured essential oils, 82.
- Hodgkin, J., natural and renewed succirubra bark, 919.
- Hölzer, A., preparation of glycollic acid, 583.
- Hönig, M., and E. Zatzek, action of potassium permanganate on certain sulphur compounds, 151.
- direct estimation of carbonic anhydride in presence of sulphides, sulphites, and thiosulphites, 216.
- Hoffmann, C., bismuthic acid, 824.
- Hoffmann. See also Rugheimer.
- Hoffmann, A. W., aediamine, 1289.
- action of ammonium chloride on glycol at high temperatures, 1284.
- action of bromine in alkaline solution on amines, 1114.
- behaviour of ethylidene chloride with ethylamine and amylamine, 1275.
- caffeic acid in hemlock, 1353.
- conine, 1200.
- conversion of aromatic amines into the ethers of the corresponding phenols, 1314.
- conversion of primary amines into nitriles, 1288.
- dinaphthylsulphone, 1362.
- reaction for pyridine bases, 1438.
- tetramethylated amidobenzene, 1320.
- Hofmeister. See Ellenberger.
- Hohnel, F. v., and J. Wolfbauer, "butter-beans," 1209.
- Holdefleiss, earth-nut cake, 356.
- manuring beet, 103.
- palm-cake and palm-meal, 631.
- Holdefleiss, and M. Herter, production and cost of farmyard manure, 867.
- Hollrung, M. W., rubellan, 1105.
- Holthof, C., estimation of arsenic, 1428.
- Homolka, B., action of potassium cyanide on nitrated benzaldehyde, 1342.
- Homolka. See also Baeyer.
- Honig. See Habermann.
- Hoppe-Seyler, F., action of oxygen on the activity of the lower organisms, 1399.
- chemical changes in soil and in drainage water, 633.
- Hoppe-Seyler, J., knowledge of indigo-forming substances in the urine, 1058.
- Hornberger, R., mineral constituents of the seeds of forest trees, 353.
- Hossfeld, W., soil-temperature in relation to the air-temperature, 357.
- Houdart, E., preservation of wines, 130.
- Houdès, A., crystallised colchicine, 1055.
- Houzeau, ammonia in rain-water, 104.
- Howard, W. C., thebaine, 1201.
- Howe, J. L., a nitrile of anhydro-benzodiamidobenzene, 741.
- ethyl derivatives of anhydro-benzodiamidobenzene, 741.
- Howitt, A. W., the rocks of Noyang, 972.
- Howitz. See Claus.
- Hübl, examination of beeswax, 506.
- general method of examining fats, 1435.
- Hübner, H., substituted benzoic acids, 314, 599.
- Hübner, H., and R. Schüpphaus, formanhydroisodiamidotoluene, 1143.
- Hübner, H., A. Tolle, and W. Athenstadt, action of dimethylparatoluidine and dimethylaniline on ethylene bromide, 1317.
- Hübner, R., derivatives of benzene-sulphonic acid, 1180.
- derivatives of isethionic acid, 1126.
- Huetlin. See Willgerodt.
- Hugounenq, L., estimation of urea, 122.
- Hulva, F., self-purification of sewage contaminated rivers, 932.
- Humpidge, T. S., atomic weight of beryllium, 261.
- displacement of chlorine by bromine in silver chloride, 1245.
- Hundesagen, F., synthesis of lecithin, 280.

- Hunt, T. S., decay of rocks geologically considered, 567.
 Hurter, F., the future of the chlorine industry, 225.
 Hurter. See also Gaskell.
 Hussak, E., dichroite from Asama-Yama, 407.
 Hussak. See also Doelter and Pelz.
 Husemann, T., ptomaines and their significance in toxicology, 469.
 Husson, C., detection of blood stains on washed clothes, 376.
 Hybbeneth, F., amidobenzenemeta-sulphamide, 72.

I.

- Iddings. See Hague.
 Igelström, apatite from Horrsjöberg, Sweden, 269.
 Ihne, E., influence of solar rays on the temperature of trees, 917.
 Ilinski, M., action of ammonia on nitroso- β -naphthol, 1035.
 — Dumas' nitrogen-apparatus, 1072.
 Ilosvay. See Berthelot.
 Imai. See Kellner.
 Irving, A., action of sunlight on phosphorus anhydride, 156.
 Isambert, dissociation of ammonium carbonate in presence of an excess of one of its elements, 388.
 — dissociation, 549.

J.

- Jackson, C. L., and G. T. Harts-horn, parabromobenzyl compounds, 665.
 Jackson, C. L., and A. E. Menke, method of preparing borneol from camphor, 666.
 Jackson, H., action of arsenious anhydride on glycerol, 896.
 Jacobsen, E., dye-stuffs from pyridine and quinoline bases, 799.
 Jacobsen, E., and C. L. Reimer, condensation-products of methylated quinolines and pyridines, 335.
 Jacobsen, O., nitro-orthotoluic acids, 745.
 — orthoxyldine, 737.
 — substances accompanying benzoic acid prepared from gum benzoïn, 1168.
 Jahns, E., constituents of larch fungus, 353.

- Jamieson, J., influence of light on the development of bacteria, 475.
 Jamin, J., compressibility and liquefaction of gases, 5.
 Jannasch, P., analysis of the foyaite from the Serra de Mouchique, Portugal, 970.
 — composition of idocrase, 828.
 — solubility of the labradorit from St. Paul Island, 971.
 Jannettaz, E., Neel, and Clermont, crystallisation under great pressure, 548.
 Janovsky, J. V., substitution-products of azobenzene and an unsymmetrical triamidobenzene, 1145.
 Japp, F. R., ammonia derivatives of benzil, 313.
 Japp, F. R., and N. H. J. Miller, hydrocyanides of the diketones and their saponification, 329.
 Japp, F. R., and R. C. Tresidder, action of nitriles on benzil, 313.
 Jaworski, W., relative absorption of neutral salts in the human stomach, 193.
 Jehn, C., insoluble fatty acid of goat's butter, 535.
 Jenkins, E. H., American milk, 533.
 Jessen, E., experiments on the time required for digestion of meat and milk, 470.
 Jodin, V., comparative growth of peas and maize in mineral and organic solutions, 1208.
 — function of silica in the growth of maize, 201, 669.
 Jörgensen, S. M., relation between luteo- and roseo-salts, 1093.
 Johnson, G. S., electrochemical researches on nitrogen, 383.
 Johnson, S. W., nitrogen determination by combustion with calcium hydroxide, 1422.
 Joly, A., barium hydrogen phosphates, 891.
 — boron, 156.
 — decomposition of the acid phosphates of the alkaline earths in presence of water, 556.
 Jones, F., detection of chlorine, bromine, and iodine, 492.
 Joslin. See Clarke.
 Joulie, H., loss of nitrogen during the fermentation of manure, 1070, 1413.
 Jourdan. See Fischer.
 Judd, J. W., and G. A. J. Cole, trachyte of the Western Isles of Scotland, 570.
 Julius, P., action of bromine and iodine on silver chloride, bromide, and iodide, 556.

Julius, P., behaviour of silver chloride, bromide, and iodide with bromine and iodine, 393.

— new reaction of benzidine, 1181.

Julius. See also Hazura and Benedikt.

Jungfleisch, E., decomposition of optically inactive compounds, 1303.

Jungk, J. F. C., analysis of malt extract, 529.

Just, F., influence of asymmetrical carbon-atoms on the ethanes derived from active amyl alcohol, 169.

K.

Kachler, J., and F. V. Spitzer, borneol from camphor, 754.

Kachler, horse-chestnuts as cattle food, 1411.

Kahlbaum, G. W. A., dependence of the boiling point on pressure, 141, 950.

Kalantaroff, A., Russian cheese, 700.

Kalischer, S., production of electricity by condensation of aqueous vapour, 138.

Kallen, J. P., and A. Stutzer, examination of clover at different stages of growth, 100.

Kander, E., action of phosphorus pentachloride on succinic chloride, 40.

Karbe, J., krugite as manure for potatoes, 926.

Kayser, R., chemistry of wine, 1445.

— examination of an apple-must and of the cider obtained therefrom, 98.

— estimation of tartaric acid in wine, 504.

Kebler. See Clarke.

Kehrer. See Hell.

Keim, A., and J. Thenn, preserving and colouring stone-work, 880.

Keiser, E. H., estimation of sulphur in organic compounds, 500.

Keiser. See also Remsen.

Kekulé, A., carboxytartaric acid, 41.

Kekulé, A., and O. Strecker, trichlorophenomalonic acid, 1122.

Kelbe, W., and A. Baur, butyltoluenes in rosin spirit, 300.

Kelbe, W., and N. v. Czarnomski, β -metaisocymenesulphonic acid, 1355.

Kelbe, W., and C. Warth, meta-isocymidine, 46.

Kellner, O., development and nutrition of Japanese silkworm, 667.

— vegetables used as food in Japan, 674.

Kellner, O., and H. Ismai, examination of certain soils in Japan, 680.

Kellner, O., and J. Sawano, rice culture in Japan, 672.

Kellner, O., and others, development and nourishment of the silkworm, 1202.

— use of carbolic acid in the disinfection of sewage, 697.

Kempner, C., influence of air somewhat deficient in oxygen on animals, 344.

Kendall, J. A., new method of generating electricity, 652.

Kenngott, A., minerals from Brazil, 564.

Kent, W. H., and B. Tollens, lactose and mucic acid, 980.

Kershaw, J. B. C., improved form of Orsat's apparatus for the estimation of oxygen, 695.

Kette, W., influence of krugite on the percentage of starch in potatoes, 1401.

— three processes for obtaining albuminoid matter from potato-waste, 948.

Kiliani, H., a new saccharin from milk-sugar, 283.

— preparation of glycollic acid from glycerol, 295.

Kiliani, H., and S. Kleemann, conversion of gluconic acid into normal caprolactone, 993.

— gluconic acid, 730.

King, A. J., Clerget's method of sugar analyses by inversion, 503.

Kinnicutt, L. P., modification of Noack's method of preparing carbonic oxide, 260.

Kinnicutt, L. P., and J. U. Nef, volumetric determination of combined nitrous acid, 493.

Kinnicutt, L. P., and G. M. Palmer, β -phenyltribromopropionic acid, 603.

Kircher, G., chlorinated anthraquinones, 1039.

Kissling, R., tobacco fat, 173.

Kjærsk, separation of wheat-meal from rye-meal, 376.

Kjeldahl, J., a new method of determining nitrogen in organic substances, 364.

Klawitter, Chili saltpetre for barley, 1419.

Kleemann. See Kiliani.

Klein, D., a general reaction of polyhydric alcohols in presence of borax and paratungstates, 1284.

— antimony derivatives of mucic and saccharic acids, 424.

— borotungstates, 559, 1266.

— compounds of tellurous anhydride with acids, 1256.

- Klein. See also Anschütz.
- Kleinert, estimation of phenol in commercial carbolic acid, 503.
- halymetric determination of alcohol in beer, 641.
- Klepl, A., dry distillation of parahydroxybenzoic acid, 446.
- Klewitz, A., and G. Krieger, removal of juice from sugar-beet, 647.
- Klingel, P., amidoacetophenone and allied substances, 1343.
- Kloos, J. H., the granite district of the Black Forest, 1273.
- Knieriem, W., manuring experiments at Peterhof, 636.
- Knop, W., a concentrated nutritive fluid for plants, 1205.
- quantitative separation of potash and soda from ferric oxide, alumina, lime, and magnesia, in silicates, 110
- researches on the sugar-cane, 1212.
- retrogression of superphosphates, 1214.
- Knorr, L., action of ethyl acetoacetate on hydrazinequinizine - derivatives, 1153.
- action of ethyl acetoacetate on phenylhydrazine, 302.
- constitution of quinizine-derivatives, 1377.
- new synthesis of quinoline-derivatives, 334.
- piperylhydrazine, 467.
- synthesis of pyrroline-derivatives, 1368.
- synthesis of quinoline-derivatives, 1198.
- Knorr, L., and A. Blank, action of substituted acetoacetates on phenylhydrazine, 1380.
- Knorr, L., and C. Bülow, action of ethylic diacetosuccinate on phenylhydrazine, 1381.
- action of ethylic succinosuccinate on phenylhydrazine, 1380.
- Kobek, A., derivatives of thymol, 56.
- Kobus. See Märcker.
- Koch, C. F. A., excretion of urea and inorganic salts under the influence of increased temperatures, 1394.
- Koch, K. R., elasticity of crystals of the regular system, 1096.
- Koch, L., manuring with bone-meal, 637.
- Koch, R., and P. Miguel, micro-organisms in soils, 486.
- Koch, and others, cattle plague and protective inoculation, 96.
- Koch. See also E. Fischer.
- Koeckert. See Ceresole.
- Köhler. See Hesemann.
- Köhler, H., parethoxyphenylurethane and some of its derivatives, 1139.
- Köhnke, and others, butter-making and the souring of cream, 1448.
- Kölliker. See Wallach.
- König, J., manufacture of bone-meal, 1419.
- weathering of bone manure, 360.
- Königs, W., and G. Körner, hydroxy-cinchonic acid, 84.
- Koenigs, W., and R. Geigy, pyridine-derivatives, 1195, 1368.
- Koenigs. See also Comstock.
- Koerner, and C. Böhringer, alkaloids of Angustura bark, 341.
- Koerner, G., and A. Menozzi, action of methyl iodide on leucine and analogous compounds, 425.
- Koerner. See also Fischer and Königs.
- Kohn. See Nölting.
- Kohlrausch, F. and W., electrochemical equivalents of silver and copper, 1089.
- Kolbe, H., antiseptic action of carbonic anhydride, 508.
- chemical constitution of acetyl-satin and acetylisatinic acid, 78.
- experiments on the preparation of nitrophenetol, 433.
- Kollert, J., electric properties of flames, 651.
- Kommenos, T., action of fatty aldehydes on malonic acid and its ethyl salt, 422.
- Konovaloff, D., heat of formation of pyrosulphuric chloride, 250.
- mixed liquids of constant boiling point, 1247.
- thermal effect of mixing liquids, 1244.
- Konovaloff. See also Menschutkin.
- Kopp, H., mixed crystallisation, 958.
- specific volumes of liquid substances, 147.
- Kopp. See also Michael.
- Korn, O., derivatives of nitro- β -naphthaquinone, 1186.
- Kornatzki, O., azotoluenedisulphonic acid, 71.
- parabromotoluenedisulphonic acid, 70.
- Kosmann, B., minerals from Upper Silesia, 969.
- Kossel, A., chemistry of the nucleus, 97.
- Kostanecki. See Liebermann.
- Kotcheroff, action of acetylene hydrocarbons on mercuric salts, 572.
- Kraemer, C., phenol colouring matter, 1340.

Kraemer. See also Brunner.
 Krafft, F., cetyl alcohol and cetyl-acetic acid, 1280.
 — higher homologues of acetylene, 1108.
 — preparation of the higher olefines, 571.
 Krafft, F., and J. Bürger, higher homologues of acetic chloride, 1125.
 Kraus, C., easily oxidisable substances in plant-sap, 918.
 Kraus, G., acidity of cell-sap, 1209.
 Kraut, K., chlorides of lime and lithia, 16.
 Kraut, K., and Y. Schwartz, hip-paraffin, 838.
 Kreis, H., different methods of distillation compared, 1248.
 — nitration of thiophene derivatives, 1314.
 Kreis. See also Meyer.
 Kretschy, M., kynuric acid, 750.
 Kretschy. See also Barth.
 Kreusler, W., apparatus for the reduction of measured gas-volumes to normal conditions, 775.
 Kreusler, U., and O. Henzold, the alkaline reaction of glass as a source of error in analysis, 775.
 Kreusler, U., and H. Landolt, examination of H. Grouven's method of nitrogen estimation, 1215.
 Kreuzhage, C., and E. Wolff, importance of silicic acid in the culture of oats, 1211.
 Krieger. See Klewitz.
 Kronfeld, E., bromine-derivatives from amidonaphthaquinonamide, 1037.
 — hydroxynaphthaquinonamide and amidonaphthaquinonamide, 1037.
 Krouchkoll, currents produced by immersion and emersion, and by the movement of a metal in a liquid, 2.
 Kroupa, G., volumetric estimation of mercury, 695.
 Kruckenberg. See Ewald.
 Krüger. See Tiemann.
 Krüss, G., preparation of nitriles, 1314.
 — sulphur compounds of molybdenum, 160, 1267, 1268.
 Kruis, K., estimation of extract of malt, 1439.
 — fermentative strength of beer-yeast in distillery mash, 939.
 Krukenberg, C. F. W., cornein, 1390.
 Krutwig, J., separation of iodine and chlorine in the dry way, 1073.
 Kügler, R., matico-camphor, 611.
 Kühn, G., and others, digestibility of wheat-chaff and the changes which it

undergoes by different methods of preparation, 772.
 Kühne, W., hemialbumose in urine, 854.
 Kühne, W., and R. H. Chittenden, decomposition-products of albumin, 849.
 — new forms of albumose, 1389.
 Kütz, R., laserpitin, 182.
 Kuijper, H. F., alcohol in the brain in cases of inebriation, 370.
 Kumpf, G., nitrobenzyl chlorides and iodides, 1004.
 — parantitrophenyl-benzyl ethers and phenyl parantitrobenzyl ethers, 1005.
 Kunz, G. F., white garnet from Wakefield, Canada, 828.
 Kupelwieser, F., manufacture of iron and steel, and methods of testing them, 519.
 Kutscher, E., function of tannin in plants, 628.
 Kutscheroff, M., action of the hydrocarbons of the acetylene series on mercuric oxide and its salts, 719.
 Kuzel. See Fischer.

L.

Lach, B., aldoximes, 1154.
 Lachowicz, B., Galician petroleum, 166.
 — some paraffins and their derivatives, 166.
 — preparation of acid anhydrides, 990.
 — reduction of dichlorophenanthrene, 81.
 — replacement of ketonic chlorine-atoms by hydrogen, 1039.
 La Coste, W., and J. Bodewig, meta-chloroquinoline, 1196.
 Ladenburg, A., bases of the pyridine and piperidine series, 759.
 — behaviour of diamines towards nitrous acid, 738.
 — α -isopropylpiperidine, 1386.
 — piperethyialkine bromide, 760.
 — synthesis of piperidine, 760.
 — synthesis of piperidine and its homologues, 1054.
 — synthesis of pyridine and piperidine bases, 1195.
 Ladenburg, A., and C. F. Roth, hyoscine, 761.
 — — synthetical piperidine, 1202.
 Ladenburg, A., and L. Schrader, isopropylpyridines, 1048.
 Ladureau, A., sulphurous anhydride in the air of Lille, 710.

- Lagrange, P., estimation of glucose, 370.
- Lalande, F. de, and G. Chaperon, a new copper oxide cell, 541.
- copper oxide battery, 1.
- Landmann, B., determination of acetic acid in wine by distillation with steam, 641.
- Landolt, H., solid carbonic anhydride, 992.
- time of existence of thiosulphuric acid in aqueous solution, 554.
- Landolt. See also Kreusler.
- Landrin, E., influence of calcination and of carbonic anhydride on the setting of hydraulic cements, 933.
- Landwehr, A., new method for preparing and estimating glycogen, 1287.
- Langer, J., isomeric thiophenesulphonic acids, 1133.
- Langer, T., absorption of carbonic anhydride by beer, 1233.
- Langlebert, properties of linseed and sesame seeds, 852.
- Lasaulx, A. v., conversion of rutile into ilmenite, 1104.
- reaction to determine the presence of metallic iron, 1078.
- twin crystals of dichroite from the Laacher See, 407.
- Lasaulx, A. v., and others, Krakatoa ashes, 974.
- Laspeyres, H., artificial crystals of manganese-iron-olivine, 410.
- Latschenberger, J., detection and estimation of ammonia in animal liquids, 1215.
- Laun, W., aromatic alkynes, 1011.
- piperpropylalkyne, 1054.
- Lauth, C., Bouliet's pyrometer, 543.
- manufacture of Sèvres blue, 644.
- Lawes, Sir J. B., and J. H. Gilbert, determinations of nitrogen in the soils of experimental fields at Rothamsted, and bearing of the results on the question of the sources of nitrogen in our crops, 682.
- Lawes, J. B., J. H. Gilbert, and R. Warrington, ammonia, chlorine, and sulphuric acid in the rain-water collected at Rothamsted, 209.
- nitric acid in soils and subsoils at Rothamsted, 357.
- Lea, A. S., ferment from the seeds of *Withania coagulans*, 535.
- Lebedeff, pathological formation of fat, 1392.
- Le Bon, G., properties of antiseptics and of the volatile products of decay, 225.
- Lecco. See Meyer.
- Lechartier, G., analysis of soils, 921.
- Lechartier, G., assimilability of the phosphoric acid in rocks and soils, 868.
- Le Chatelier, H., compounds of haloid salts with oxysalts of the same metal, 1261.
- decomposition of cements by water, 1443.
- decomposition of salts by water, 807.
- Le Chatelier. See also Mallard.
- Ledebuhr, A., so-called "burning" of iron and steel, 935.
- Ledingham, L. N., weight voltameter for measuring electric currents, 654.
- Leduc, A., new method of directly measuring absolute magnetic intensity, 1243.
- Lee, C. T., indigo assaying, 1438.
- Lee. See also Moritz.
- Leeds, A. R., analysis of flour, 1080.
- conversion of carbonic oxide into carbonic anhydride by nascent oxygen, 15.
- determination of organic matter in water, 369.
- moist phosphorus, air, and carbonic oxide, 660.
- presence of hydrogen peroxide and ammonium nitrite and absence of ozone in the products of the combustion of hydrogen and hydrocarbons in air, 818.
- soap analysis, 223.
- titration of organic matter in potable waters by means of permanganate, 499.
- Leeds, A. R., and E. Everhart, analysis of mustard, 878.
- Leffmann, H., Geyser waters and deposits, 30.
- Lehmann, C., and others, "champion spice," 473.
- Lehmann. See also Patri.
- Lellmann, E., derivatives of naphthalene, 751.
- difference in chemical behaviour of aromatic diamines, 49.
- Wachendorff's chloronitrotoluene, 1133.
- Lemoine, G., chemical action of light; decomposition of oxalic acid by ferric chloride, 381.
- hydrocarbons from American petroleum and their derivatives, 1106.
- sulphur salts derived from phosphorus trisulphide, 555.
- Lenz, W., assay of commercial potassium iodide, 366.
- purification of hydrogen sulphide, 215, 776.
- Leone, T., amides of α - and β -naphthoic acids, 1362.

- Lépine, R., and G. Guérin, partially oxidised sulphur in urine, 347.
- Lépine, R., and others, proportion of incompletely oxidised phosphorus contained in the urine, 913.
- Lerch, O., magnesium bromide and iodide, 262.
- Leser, G., orthoxylene-derivatives, 1313.
- Leube, W., alteration of cane-sugar in the human stomach, 91.
- Levallois, A., action of cuprammonium solutions and of cellulose on polarised light, 577.
- action of solutions of cellulose on polarised light, 833.
- polarimetric investigation of various forms of cellulose, 1288.
- Levat, alcohol from melon-juice, 233.
- Levinstein, I., English and Scotch coal-tar xylenes, 898.
- Lewin, L., behaviour of *Folia uva ursi* and arbutin in the animal organism, 915.
- Lewis, W. J., crystal of stephanite from Wheal Newton, 405.
- Lewis. See also Storer.
- Lewkowitsch, J., conversion of active mandelic acid to inactive, 318.
- optical rotatory power of leucine, 1115.
- optically active glyceric and lactic acids, 296.
- Lewy, separation of aniline, paratoluidine, and orthotoluidine, 46.
- Leydhecker, A., cultivation of winter flax, 921.
- Lezé, R., analysis of some cider apples, 203.
- L'Hôte, T., purification of arseniferous zinc, 962.
- Licht. See Bergreen.
- Lidoff and Tichomiroff, electrolysis of chlorates, 542.
- Liebermann, C., constitution of azonaphthol dyes, 609.
- derivatives of quercetin, 1365.
- α -nitroanthraquinonesulphonic acid, 1040.
- sylvic and pimic acids, 1364.
- the quinovin-group, 1191.
- Liebermann, C., and G. Glock, anthraquinonecarboxylic acid, 1188.
- Liebermann, C., and S. Kleemann, methylpropylacetic acid, 1120.
- Liebermann, C., and S. v. Kostanek, azo-compounds, 1146.
- parazocresol, 736.
- Liebermann, L., volumetric method for the estimation of fat in milk, 372.
- Lieben, A., and L. Haitinger, nitrogenous derivatives of chelidonic acid, 1196.
- Liechti, L., and W. Suida, composition of Turkey-red oil, 238.
- contributions to the chemistry of mordants, 794.
- Lifschütz, J., action of concentrated sulphuric acid on nitroanthraquinone, 1187.
- action of concentrated sulphuric acid on α -nitroanthraquinonesulphonic acid, 1189.
- Lill, M., and L. Schneider, manganese ores, 24.
- Lindet, L., compounds of gold chlorides with phosphorus chlorides, 968.
- presence of mannitol in the anana, 629.
- Lindo, D., estimation of phosphoric acid; oxalic acid method as compared with the molybdic method, 929.
- estimation of phosphoric acid as magnesium pyrophosphate, 493.
- vitreous and ordinary amorphous silica, 1258.
- Lindström, A., occurrence of kaolin in Sweden, 273.
- Lindström, G., analysis of ganomalite, 972.
- Lintner, C., nitrogenous constituents of barley and malt, 790.
- Lipp, A., indole, 1030.
- Lippitt, T. P., native ferrous and aluminium sulphate from Mexico, 24.
- Lippmann, E., and F. Fleissner, azylines, 178.
- Lippmann, E. v., and others, beet-sugar, 939.
- Lippmann, G., a mercurial electro-dynamometer, 949.
- a mercurial galvanometer, 881.
- List, E., formic acid in rum, 378.
- Livache, A., acceleration of the oxidation of drying oils, 532.
- Lloyd, F. J., changes which take place in the conversion of hay into silage, 772.
- insoluble phosphate, 213.
- superphosphate, 867.
- Lodeman, storage of acorns, 100.
- Loew, O., compounds of silver with albuminoids, 343.
- Löwe, J., preparation of bismuth free from arsenic, and atomic weight of bismuth, 558.
- qualitative and quantitative separation of bismuth from copper, 497.
- Löwig, preparation of caustic potash and soda, 15.
- Loges. See Emmerling.

- Loiseau, D., action of carbonic anhydride on calcareous solutions of sugar, 419.
- Lommel, E., fluorescence of calcespar, 649.
- Longi, A., detection of nitric acid in presence of other acids capable of interfering with its reactions, 365.
- determinations of the quantities of gases dissolved in watery liquids, 364.
- estimation of nitrous and nitric acids, 366.
- paratoluidine as a test for nitric acid, 365.
- volumetric estimation of nitric acid, 366.
- v. Loo. See Fischer.
- Loos, D. de, Krakatoa ashes, 975.
- mineral water from Aruba, 978.
- Lord, N. W., ammonia fluoride as a blowpipe reagent, 927.
- Losanitsch, S. M., avalite, 1272.
- chlorine derivatives of dibromodinitromethane, 1107.
- dibromodinitromethane, 277.
- Lossen, W., structure of hydroxylamine derivatives, 1324.
- Lossen, W., and A. Zander, specific volumes of liquids, 1252.
- Louguinine, heats of combustion of ketones and of carbonic ethers, 547.
- Louise, E., an aromatic diketone, 904.
- tribenzoylmesitylene, 1000.
- Lóvén, J. M., thiolactic and thiodilactic acids, 1298.
- Low, A. H., volumetric method for the estimation of arsenic, 115.
- Luckenbach, G., derivatives of benzyl cyanide, 1134.
- derivatives of isophthalonitrile and terephthalonitrile, 1157.
- Ludwig, E., and A. Renard, analyses of idocrase from Ala and Monzoni, 408.
- Luedecke, O., pyrostilpnite from St. Andreasberg, 403.
- Luna, R. de, cholera, 349.
- Lunge, G., action of soda, lime, and magnesia on the salts of ammonia and amines; titration of aniline, 776.
- chlorides of lithia and lime, 820.
- density of milk of lime, 712.
- density of sulphuric acid, 1256.
- formation of sulphuric acid in the lead chambers, 698.
- manufacture of sulphuric acid from pyrites, in America, 1082.
- the salt work of Giraud in France, 513.
- titration of sulphurous acid and its salts, 776.

- Lunge, G., and C. Bodewig, estimation of sulphur in pyrites, 492.
- Lunge, G., and R. Burckhardt, fluoresceins from malic acid, 1340.
- Luvini, J., spheroidal state, 957.
- Lyte, F. M., estimation of chlorine, bromine, and iodine in presence of one another, 694.

M.

- Maassen, A., amidocresols, 1145.
- Maben, T., solubility of calcium hydroxide in water at different temperatures, 891.
- Mabery, C. F., decomposition of chlorotribromopropionic acid by alkaline hydroxides, 663.
- products of the dry distillation of wood at low temperatures, 788.
- Mabery, C. F., and F. C. Robinson, substituted acrylic and propionic acids, 663.
- Macaluso, D., spontaneous oxidation of mercury, 263.
- McCay, L. W., cobalt-, nickel-, and iron-pyrites, 1098.
- MacEwan, P., commercial sodium nitrite, 514.
- McGowan, G., trichloromethylsulphonic chloride, 1126.
- Mach, E., *Peronospora viticola*, 1406.
- Mack, K., pyroelectric properties of boracite, 655.
- Mackintosh, J. B., volumetric determination of manganese, 220.
- McLeod, H., pressure of mercury vapour at the ordinary temperature, 385.
- McMunn, C. A., colouring matters of the so-called bile of invertebrates, and of the bile of vertebrates: some unusual urine pigments, &c., 194.
- Märcker, M., a cause of the differences noticed in the estimation of superphosphates, 639.
- composition of Saxon barley, 630.
- diffusion residues as cattle food, 921.
- effect of high farming on the amount of nutritious matter in straw, 772.
- examination of Aves guano, 489.
- fertility of a soil which had been removed from its original position and subsequently replaced, 773.
- influence of manuring on the composition of potatoes, 102.
- manuring barley and oats with nitrogen and phosphates, 925.

- Mäcker, M., manuring experiments with rye and wheat, 103.
 — manuring potatoes, 865.
 — palm oil residues as fodder, 355.
 — poisonous action of ammonium thiocyanate on plant life, 768.
 — Stassfurt salts as absorbents in stables, 491.
 — value of various nitrogenous manures, 488.
 — varieties of sugar-beet, 865.
 — woody fibre as fodder, 864.
 — yield of crops under steam cultivation, 359.
- Mäcker, M., and Kobus, chemical changes induced by the sprouting of grain, 200.
- Mäcker, and others, cultivation of cereals, 482.
 — cultivation and preservation of potatoes, 101.
 — cultivation of sugar-beet, 1211.
 — cultivation of *Vicia villosa* and of *Pisum arvense*, 769.
- Mäcker. See also Bessler.
- Magel, G., mispickel from Auerbach, 1100.
- Maggi, L., prothistological examination of potable waters, 369.
- Magnanini. See Spica.
- Magnier de la Source, L., influence of plastering on the composition of wine, 646.
- Magerstein, V., volume weight of some manures, 1213.
- Mainzer, K., phenethyl compounds, 1000.
- Mairet, A., biological function of phosphoric acid, 1392.
 — influence of intellectual activity on the elimination of phosphoric acid by the urine, 1394.
- Malbot. See Du villier.
- Malerba, P., fatty constituents of common chestnuts, 202.
- Mallard, E., action of heat on heulandite, 829.
- Mallard and Le Chatelier, combustion of explosive gaseous mixtures, 549.
 — — — — — dimorphism of silver iodide, 16.
 — — — — — relation between the pressure and the temperature of transformation of silver iodide, 1260.
- Mandelin, K., viola-quercitrin, 1191.
- Mangin. See Bonnier.
- Manteau, A., manurial experiments at Reims, 1419.
- Maquenne, crystallisation of sulphur, 1254.
 — decomposition of carbon compounds by the silent discharge, 542.
- Maquenne. See also Delhérain.
- Marcano, V., bread making, 132.
 — formation of alcohol in the fermentation of bread, 532.
 — transpiration of plants in the tropics, 1403.
- Marcano. See also Muntz.
- Marchand, E., suspended matter in water, 117.
 — volumetric estimation of potash, 695.
- Marek, G., distribution of sugar in the root of the beet, 766.
 — effects of drying and remoistening dry beets and of frost on them, 767.
 — influence of soil, size of seed, &c., on the quality and yield of sugar-beet, 103.
 — sugar-beet, 356.
- Margary, L., bromine derivatives of β -naphtholazobenzene, 326.
 — decolorising action of ferric salts on indigo, 457.
- Marignac, C., verification of some atomic weights, 813.
- Marino-Zucco, Z., ptomaines, 343, 1056.
- Marino-Zuco, F., the so-called ptomaines in relation to toxicological researches, 342.
- Markl, A., the system on which rice may be used in brewing, 235.
- Markownikoff, action of zinc propyl on acetic chloride, 1280.
- Markownikoff, and Oglobine, Caucasian petroleum, 1276.
- Martiny, B., and W. Fleischmann, loss of weight during the ripening of cheese, 1448.
- Massalski, W., determination of ammonia as nitrogen in manures, 638.
- Massen, P., the Alfanello meteorite, 415.
- Mattei, E. di, supposed toxic action of aqueous solutions obtained from fresh animal organisms, 199.
- Matthews. See Claisen.
- Mathieu-Plessy, tribasic aluminium oxalate, 296.
- Maumené, E., melting points of salts, 3.
 — melting points of nitrates, 384.
- Maumené, E. J., presence of manganese in wines and other vegetable and animal products, 879.
- Mauthner, J., cystine, 1054.
- Mayer, A., chlorophyll, 1366.
 — comparative value of artificial and natural butter as articles of food, 92.
 — compost manure, 360.
 — dopplerite, 265.

- Mayer, A., and P. Uldal¹, comparative value of fresh and artificial butter, 622.
- Mayer, and others, valuation of seeds, 200.
- Mayer, L., new process for producing a bronze-coloured surface on iron, 127.
- Mazzara, G., action of aromatic aldehydes on quinine, 466.
- action of benzaldehyde and sulphuric acid on a mixture of aniline and nitrobenzene, 442.
- compound of quinine with chloral, 186.
- mono- and di-chloracetate of quinine, 465.
- Mazzara, G. and G. Possetto, action of benzyl chloride on quinine, 465.
- Medicus, L., acridine, 748.
- Méhu, C., extraction of indigotin and indirubin from urine, 1059.
- Meidinger, electroplating zinc with nickel, 231.
- polished brass, 521.
- Meissl, E., testing of yeast, 931.
- Meissl, E. and F. Böcker, notes on the bean of *Soja hispida*, 918.
- Melikoff, homologues of glycidic acid, 1301.
- Memminger, C. G., analysis of "tobacco stems," 99.
- Menges, density of liquid oxygen, 553.
- Menke. See Jackson.
- Menzio, A., normal hydroxyvaleric acid, 1122.
- Menzio. See also Koerner.
- Menschutkin, N., formation of amides from ammonium salts, 836, 1294.
- influence of isomerism on etherification, 726.
- influence of temperature on the rate of certain reactions, 1295.
- Menschutkin, N., and D. Konovaloff, vapour-density of tertiary amyl compounds, 1119.
- Merck. See Claus.
- v. Mering, action of potassium ferri-cyanide on blood, 1398.
- estimation of chlorides in dog's urine, 1423.
- Merling, G., belladonnine, 1055.
- bromo-derivatives of dimethylpiperidine, 1385.
- Merz, V., and R. Gasiowski, conversion of alcohols of the ethyl series into amines, 984.
- Merz, V., and W. Weith, bromine derivatives, 588.
- exhaustive chlorination of aromatic substances, 588.
- Merz, W., dimethylquinaldine, 1053.
- Merz. See also Gousiorowski.
- Metzdorf, bacillus of cattle plague, 1398.
- Metzger, S., paradibromoquinoline, 757.
- Meunier, J., determination of vapour-densities by gaseous displacement under low and variable pressures, 886.
- new compound formed in the preparation of benzene hexachloride, 733.
- Meunier, S., analysis of the rocky portion of the syssiderite of Atacama, 414.
- formation of bauxite and gypsum, 406.
- geological history of the syssiderite of Lodran, 417.
- the Pallas meteoric iron, 416.
- Meyer, A., lactosin, 980.
- Meyer, E. v., chemical constitution of anthraquinone, anthracene, &c., 1186.
- Meyer, G., incombustible paper and colour, 379.
- Meyer, L., ethyl glycollate, 992.
- temperature regulator, 883.
- Meyer, P. J., action of dichloroacetic acid on aromatic amines, 47.
- Meyer, V., action of hydroxylamine on chelidonic acid and meconic acid, 993.
- chlorine monoxide for lecture experiments, 710.
- constitution of phthalic chloride and of anthraquinone, 1187.
- ferrous chloride, 965.
- isomerism in the thiophene series, 1131.
- lecture experiments, 552.
- the thiophene and pyrroline groups, 586.
- vapour-density apparatus, 956.
- Meyer, V. and H. Kreis, homologues of thiophene, 1131.
- substances accompanying toluene from coal-tar, 1132.
- the thiophene group, 45.
- Meyer, V., and M. T. Lecco, preparation of phenylhydrazine, 597.
- Meyer, V., and T. Sandmeyer, artificial formation of thiophene, 45.
- Meyer, V. and E. Schulze, action of hydroxylamine salts on plants, 1210.
- Meyer, V., and O. Stadler, analyses of volatile organic sulphur compounds, 1215.
- pyrroline dyestuffs, 1045.
- Michael, A., action of acetic anhydride and acetic chloride on maize and potato-starch, 420.
- action of aldehydes on phenols, 597.

- Michael, A., action of aromatic hydroxy-acids on phenols, 310.
 — action of sodium ethoxide on bromethylidene bromide, 418.
 — constitution of resocyanin, 736.
 — convenient method for preparing bromacetic acid, 421.
 — new synthesis of allantoïn, 426.
 — a new synthesis of cinnamic acid, 446.
 — some convenient quantitative lecture apparatus, 658.
 — synthetical researches on the glucoside group, 439.
 Michael, A., and A. M. Comey, action of aldehydes on phenols, 598.
 — ethyl phenylsulphonacetates, 319.
 Michael, A., and A. Kopp, formation of crotonaldehyde and β -hydroxybutyraldehyde from acetaldehyde, 420.
 Michaelis, A., diacetylphosphorous chloride, and diacetylphosphinous acid, 991.
 Michaelis, A., and U. Genzken, tolylstibine, 1135.
 Michaelis, A., and H. v. Soden, nitro- and amido-triphenylphosphinic oxide, 1180.
 Michel-Lévy, A., basic eruptive rocks of Mâconnais and Beaujolais, 414.
 Michler, W., and H. Pattinson, tetramethylbenzidine, 747.
 Miguel. See Koch.
 Miller, O., α -hydroxyphthalic acid, 1177.
 Miller. See also Armstrong and Japp.
 Miller, H. v., and C. Opl, recovery of hydrogen sulphide from alkali waste, 1442.
 v. Miller. See Doebner.
 Millot, Gladding's process for the estimation of retrograde phosphates, 639.
 Miquel, action of different antiseptics, 1220.
 Mixter, W. G., reduction of benzoyl-orthonitranilide, 1327.
 — reductions with zinc and ammonia, 301, 665.
 Möhlau, R., helianthin, 1149.
 — indophenol-like dyes and indophenols, 593.
 — methylene-blue, 740.
 — syntheses of methylene-blue, 306.
 Mohr, G., benzylsulphonic acid, 69.
 Moissan, H., chromic acid and chromic anhydride, 1267.
 — chromic acid and hydrogen peroxide, 20.
 Moldenhauer, C., and C. Heinzerling, purification of glycerol, 938.
 Monnier, D., Skrivanoff's cell, 881.
 Moreaux. See Adrian.
 Morgan, J. M., derivatives of ortho-nitrocinnamic acid, 747.
 Morgen, A., loss of nitrogen by organic matters during putrefaction, 1214, 1417.
 Moritz, J., analyses of wine, 645.
 Moritz, E. A., and A. Hartley, malt extract by different waters, 1445.
 Moritz and Lee, behaviour of tannin in hops towards the albuminoids in malt, 527.
 Morse, H. N., and W. S. Bayley, haydenite, 1271.
 Mosso. See Guareschi.
 Muck, F., recovery of barium and strontium compounds, 394.
 Mügge, O., thenardite, 969.
 Müller, A., abridged process for Turkey-red dyeing, and printing with alizarin, 1236.
 — action of hydroxylamine on carboxytartronic acid; ethers of isonitrosophenylacetic acid, 584.
 — sanitation of large towns and value of the refuse matter from them, 642.
 Müller, F., evolution of gas from steel-castings, 787.
 Müller, F., and others, Chili saltpetre for sugar-beet, 1418.
 Müller, H., influence of temperature on the fermentation of must, 647.
 Müller and others, cattle plague and Pasteur's protective inoculation, 473.
 Müller, H., and others, vine diseases and their remedies, 481.
 Müller. See also Zimmermann.
 Müller-Erbach, W., dissociation of salts containing water, and relation of the dissociation to the molecular volume of the combined water, 952.
 — law of smallest volumes, 12.
 — melting-points of haloid salts in relation to the contraction occurring during their formation, 709.
 Müller-Jacobs, A., composition of Turkey-red oil and its mode of action, 946.
 Müntz, A., and E. Aubin, carbonic anhydride in the atmosphere, 659, 710.
 — origin of combined terrestrial nitrogen, 104.
 Müntz, A., and V. Marcano, persite, a sugar analogous to mannitol, 1285.
 Münzer. See v. Richter.
 Munk, H., influence of movement on the secretion of milk, 1205.

- Munk, I., formation of neutral fat from fatty acids in the animal system, 852.
 Munroe, C. E., flashing test for gunpowder, 927.
 — spontaneous decomposition of "explosive gelatin," 947.
 Musculus, F., starch, 574.
 Musset, F., tannin, 1439.
 Muth, E., preparation of ammonium albuminate, 945.
 Mylius, F., derivatives of uric acid, 1128.
 — sarcosine, 994.

N.

- Nägeli, E., camphoroxime, 1190.
 — reactions of hydroxylamine, 610.
 Nafzger, F., acids contained in beeswax, 1297.
 Nahnsen, R., dithienyl, 1132.
 Nasini, R., atomic refraction of sulphur, 149.
 — specific rotatory power of photosantonio acid, 464.
 Nasse, O., new reaction for pyrogallol, 1078.
 Natterer, K., compound formed by the addition of hydrochloric acid to α -dichlorocrotonaldehyde, 1293.
 Naudin, L., extraction of perfumes and essential oils, 378.
 — purification of alcohol, 645.
 Naudin, L., and A. Bidet, electrolysis of sodium chloride, 541.
 Nauen, O., triphenylmethyamine, 899.
 Nautier, A., manuring experiments with potatoes, beet, and maize, 635.
 Neergard, T. v., irrigation as preventative of injury from frost, 357.
 Nef. See Kinnicutt.
 Nemirowsky, J., action of carbon oxychloride on ethylene glycol, 419.
 Nencki, M., new method of preparing glycocine, 583.
 — plastered wine, 233.
 Nessig, W. R., the more recent eruptive rocks of Elba, 567.
 Nessler, J., clouding and fining of wines, 233.
 — gypsum for manure, 637.
 — improvement of inferior wine by addition of the husks of superior grapes, 938.
 — manuring experiments on tobacco, 362.
 — manuring of tobacco, 490.
 — red wine manufacture in Germany, 130.
 Nessler, J., wool-dust, 637.
 Nessler, J., and M. Barth, volatility of glycerol at 100°, 1434.
 — wine analyses, 1432.
 Neubert. See Schmoeger.
 Newbury, S. B., preparation and reactions of crotonaldehyde, 294.
 Newlands, J. A., the periodic law, 958.
 Nicol, W. W. J., molecular volumes of salt solutions, 658.
 — nature of solution, 253.
 Niederstadt, constituents and properties of some water-plants, 108.
 — flowers of *Rosa centifolia*, 97.
 Nietzki, R., azo-colours, 1036.
 — colouring matters formed by the simultaneous oxidation of paradiamines and monamines, 740.
 — paramidoacetanilide and some new azo-derivatives, 1016.
 — quinone-derivatives, 58.
 Nietzki, R., and T. Benckiser, acetyl-derivatives of aromatic amidosulphonic acids, 1024.
 Niewerth, H., preparation of strontia, 712.
 Nilson, L. F., thorite of Arendal, 406.
 Nilson, L. F., and O. Pettersson, vapour-density of beryllium chloride, 820.
 Nippgen, J. A., artificial manures for vineyards, 637.
 Nobbe, E., and others, poisonous effects of arsenic, zinc, and lead on vegetable organisms, 1407.
 Nölting, E., orthonitrobenzyl chloride, 1005.
 — phenols from coal-tar of high boiling point, 1003.
 Nölting, E., and G. v. Beechi, constitution of phthalyl chloride, 1024.
 Nölting, E., and A. Collin, nitration of benzene-derivatives, 1011.
 — nitro-ortholuidine (m.p. 107°) and its derivatives, 1006.
 — notes on pyridinedicarboxylic acid and on blue colouring matters from rosaniline, 1048.
 — trinitroresorcinol, 1004.
 Nölting, E., and O. Kohn, azo- and disazo-compounds of cresols, 900.
 — nitroso-orthocresol, 1003.
 Nölting, E., and O. N. Witt, orth-amidoazo-compounds, 742.
 Norton. See Tschermac.
 Nowoczek, sugar-beet culture and manuring, 921.
 Noyes, W. A., oxidation of benzene-derivatives with potassium ferricyanide, 299.

Nylander, E., alkaline bismuth solution as a test for glucose in urine, 1433.

O.

- Odernheimer, E., action of hydroxylamine on meconic, comenic, and pyromeconic acids, 1302.
 — furfuraldehyde-derivatives, 585.
 — Laubenheimer's reaction, 1038.
 Oebbeke, K., Krakatoa ashes, 974.
 Ogata, M., and others, experiments in digestion, 912.
 Ogliandolo, A., action of nitric acid on teucrin, 332.
 — preparation of chloride of phosphorus from phosphates, 392.
 — sulphur from the fumaroles of Montecito, in the island of Ischia, 1098.
 — syntheses of acetylphenylparacoumaric and phenylparacoumaric acids, 176.
 Oglobine. See Markownikoff.
 Ogston, G. H., and others, estimation of phosphoric acid, 871.
 Oliveri, V., action of acid chlorides on chloral allylate, 1117.
 — chemical nature of phlorol, 174.
 Oliveri, V., and A. Denaro, quassin, 1192.
 Oliveri. See also Paternò.
 Olszewski, K., critical temperature and pressure of air; relation between its boiling point and the pressure, 1257.
 — critical temperature and pressure of nitrogen; boiling points of nitrogen and ethylene, 1257.
 — density and coefficient of expansion of liquid oxygen, 816.
 — liquefaction of hydrogen, 889.
 — temperature of solidification of some gases and liquids, 816.
 Onimus, conversion of liquid batteries into dry piles, 1240.
 Onufrowicz, A., action of copper on benzotrichloride, benzal chloride, and benzyl chloride, 1133.
 Opl. See v. Miller.
 Orłowski, A., use of ammonium thiosulphate instead of sulphuretted hydrogen in qualitative analysis, 363.
 Osann, A., basaltic rocks from the Faroe Islands, 415.
 Ossipoff, J., oil of hops, 459.
 Ost, H., action of hydroxylamine and ethylamine on comenic acid, 1302.

- Ostwald, W., action of acids on methyl acetate, 581.
 — determination of chemical affinities, 812.
 — inversion of cane-sugar, 1113.
 Otto, faults in butter manufacture, 135.
 Otto, J. G., changes which proteid matters undergo by the action of pancreatic ferment, 1056.
 — metahæmoglobin, 911.
 Otto, R., action of potassium permanganate on mercury diphenyl, 1135.
 — value of Lenz's method for the purification of hydrogen sulphide, 638.

P.

- Paal, C., action of acetic chloride on benzophenone in presence of zinc-dust, 1167.
 — action of benzoic chloride on benzaldehyde in presence of zinc-dust, 1163.
 — action of bromacetophenone on ethyl sodacetosacetate, 598.
 — derivatives of the ethereal salts of acetophenoneacetoacetic acid, 1177.
 Padé. See Arnaud.
 Page, M., determinations of the alkalis in an Indian lepidolite, 27.
 Page, preparation of chloral, 1117.
 Pagliana, S., determination of the density of solids and liquids, 213.
 — physical properties of petroleum, 277.
 Pagliani, S., and Emo, absorption of ammonia-gas by alcohols, 278.
 Pagnoul, A., composition of beetroot, 356.
 — composition of residues obtained in the beet-sugar manufacture, 699.
 Pagnoul. See also D'Orval.
 Pahl, A., constitution of amidoisobutylbenzene, 1009.
 Palm, R., chemical properties of the violet colouring matter in ergot and its detection in flour, 376.
 — extraction of colouring matters by a solution of borax, 83.
 — reagents for vegetable alkaloids, 120.
 — separation and estimation of digitalin, digitaleïn, and digitin, 507.
 Palmer. See Kinnicutt.
 Panaotovits, W., a new synthesis of anthraquinone, 1039.
 Papasogli. See Bartoli.
 Pape. See Baeyer.

- Parmentier, F., and L. Amat, dimorphism of sodium thiosulphate, 819.
- Pasteur, and others, researches on the diseases of animals, 623.
- Pastrovich, P., detection of artificial colouring matters in wine, 502.
- Paternò, E., cymene from homocumic acid, 426.
- cymenesulphonic acids, 321.
- Paternò, E., and V. Oliveri, fluorobenzene and fluorotoluene, 426.
- Pattinson. See Michler.
- Patri, and T. Lehmann, estimation of the total nitrogen in urine, 1440.
- Pauchon, E., maximum solubility of sodium sulphate, 556.
- Paucksch, H., derivatives of the amidoethylbenzenes, 1142.
- Pawlewski, B., action of aluminium chloride on a mixture of alcohols of the paraffin series with ethyl chlorocarbonate, 1279.
- critical temperatures, 252.
- ethyl phenylcarbonate, 1005.
- Pawlinoff, A., and G. Wagner, constitution of furfuraldehyde, 1304.
- Pawolleck, B., estimation of chromic oxide by titration, 640.
- Pawlow, W., tetric acid and its homologues, 41.
- Paysan, W., orthamidotolueneparasulphamide, 72.
- orthamidotolueneparathiosulphonic acid, 453.
- Pechmann, H. v., a condensation-product of malic acid, 1124.
- formation of coumarins; synthesis of daphnetin, 1173.
- Pechmann, H. v., and J. B. Cohen, compounds of phenols with ethyl acetoacetate, 1331.
- Pechmann, H. v., and C. Duisberg, substituted coumarins, 66.
- Pechmann, H. v., and W. Welsh, some new coumarins, 1346.
- Peckolt, T., maté or Paraguay tea, 479.
- Peine, G., derivatives of cinnamaldehyde, 1344.
- Pellet. See Dureau.
- Pellizzari, G., benzylic ethers of the dihydroxybenzenes, 437.
- Pelz, A., and E. Hussak, the trachyte region of the Rhodope, 414.
- Pemberton, H., manufacture of sulphuric acid, 126.
- Pendleton, J. H., antimony pentiodide, 19.
- Penfield, S. L., analyses of lithiophilite, 26.
- descloizite from Mexico, 24.
- Penfield. See also Brush.
- Penzoldt, T., and R. Fleischer, influence of respiration on elimination, 91.
- v. Perger, estimation of morphine in opium, 1217.
- Perkin, Jun., W. H., action of ethyl dibromosuccinate on ethyl malonate, 1300.
- action of ethylene bromide on ethyl aceto- and benzoyl-acetates, 64.
- action of ethylene bromide on ethyl malonate, 832.
- existence of the trimethylene-ring, 992.
- trimethylene derivatives, 1154.
- Perkin, Jun., W. H., and G. Bellenot, paranitrobenzoylacetic acid, 1023.
- Perkin, Jun., W. H., and C. Bernhardt, dehydracetic acid, 1121.
- Perkin. See also Baeyer.
- Perret, M., estimation of tannin in vegetable products, 696.
- Perry. See Hautefeuille.
- Perry, J., spectroscopic examination of vapours evolved on heating iron, &c., at atmospheric pressure, 801.
- Personne, J., an alcohol from birdlime, 1365.
- Pesci, L., *Phellandrium aquaticum*, 331.
- Peter, A., condensation-products of thiophene with aldehydes, 1000.
- v. Peter. See Schrott.
- Petermann, A., analysis of heather, brake, and broom, 207.
- beet culture with artificial manures, 1420.
- composition of chicory, 648.
- dialysis of arable land, 113.
- manurial value of nitrogenous refuse; IV, dried blood, 211.
- Petri, behaviour of aldehyde, glucose, peptone, albuminous bodies, and acetone, towards diazobenzenesulphonic acid, 1322.
- Petrieff, isomerides of fumaric and maleic acids, 1301.
- new aniline colours, 1322.
- Pettenkofer, M. v., the Liebig memorial statue at Munich, 880.
- Pettersson, O., physical properties of sea-water and ice, 889.
- Pettersson. See also Nilson.
- Pettigrew, H. P., oil of birch, 459.
- Pfordten, O. v. d., estimation of molybdenum and tungsten, 1429.
- reduction of molybdenum sulphide, 965.
- reduction of molybdenum and tungsten compounds, 559.
- titanium, 1093.

- Phipson, T. L., chemical phenomena of the respiration of plants, 1403.
 — constant production of oxygen by *Protococcus pluvialis* in sunlight, 201.
 — production of ether by the action of *Aspergillus glaucus* on lemon juice, 855.
- Piccini, A., double fluorides and oxyfluorides of titanium, 264.
- Pichard, P., absorptive power of different kinds of soil for water, 633.
 — comparative nitrifying action of certain salts, 924, 1417.
 — potassium tartrate in plastered wine, and estimation of tartaric acid, 372.
- Pichler, A., the phyllites of the Tyrolean Alps, 274.
- Pick, H., relation of the red colouring matter of the phanerogams to the migration of starch, 1402.
- Pickering, S. U., heat of hydration of salts, 803.
- Pictet. See Graebe.
- Pinner, A., action of acetic anhydride on amidines, 722.
 — action of benzoic chloride on amidines, 1324.
 — action of heat on amidine hydrochlorides, 723.
 — action of hydroxylamine on the imido-ethers and amidines, 739.
 — action of phenylhydrazine on the imido-ethers, 743, 1323.
 — imido-ethers from acetone, cyanhydrin, and allyl cyanide, 1292.
 — preparation of glyoxal-derivatives from trichlorolactic acid, 1298.
 — remarks on Lossen's paper on hydroxylamine-derivatives, 1325.
- Pistone and De Regibus, inulin, 284.
- Piutti, A., action of phthalic anhydride on secondary monamines, 448.
- Plateau, F., influence of fresh-water on marine animals and *vice versa*, 621.
- Pletzer, A., action of cold and warm baths on the temperature of the animal body, 621.
- Plöchl, J., derivatives of benzoylimido-cinnamic acid, 1348.
 — phenylglycidic acid, 604.
- Płośz, P., a urinary pigment, 1059.
- Plugge, H., behaviour of strychnine in the animal organism; product of the action of potassium permanganate on strychnine, 188.
- Pöhlmann, R., mica-diorites and kersantites of Southern Thuringia and the Frankenwald, 1273.
- Poincaré, respiration of air charged with petroleum vapour, 1057.
- Poleck, T., asarone, 1191.
 — constitution of safrone, 1339.
- Poleck, T., and K. Thümmel, new silver compounds, 156.
- Pollacci, E., testing for free sulphuric acid in wines and vinegar, 215.
- Pomeroy, C. T., estimation of chlorine, sulphuric acid, and chromium in presence of organic matter, 109.
- Ponder. See Claisen.
- Ponomareff, ethereal salts of cyanuric acid, 1278.
- Popper. See Garzarolli-Thurnlackh.
- Portele, K., reduction of extractive matter by clearing of wine, 938.
- Posseto. See Mazzara.
- Post, J., retrograde phosphoric acid, 774.
- Potilitzin, A., displacement of chlorine by bromine, 955.
 — hydrates of cobaltous chloride, 967.
- Pott, E., manuring of hops, 1422.
- Pouchet, A. G., ptomaines and analogous compounds, 617.
- Poutokine, allyl dimethyl carbinol, 1283.
- Pratesi, L., diethyl methylene ether, 171.
 — hexamethylenamine, 287.
- Prausnitz, G., β -lactone of metanitrophenylglycolic acid, 1174.
- Preece, W. H., effect of temperature on the electromotive force and resistance of batteries, 243.
- Preis. See Rayman.
- Prevost, E. W., and R. Swanwick, experiments on potatoes with different manures, 101.
- Priebs, B., action of benzaldehyde on the mononitro-derivatives of the paraffins, 313.
- Prinz, H., constitution of disulphur dichloride, 1255.
 — experiments to combine sulphur with sulphur, 1255.
- Probert, I., galvanic batteries for the electric light, 1240.
- Prollius, F., valuation of gelatin, 647.
- Prunier, L., butyl-glycerol triacetin, 1284.
- Przybytek, S., salts of mesotartaric acid, 1124.
 — second anhydride of erythrol, 979.
- Puchot, E., butylene and its derivatives, 166.
- Pufahl, O., arsenomolybdic acid, 715.
- Puscher, C., production of a gold coloured or green surface on brass, 128.

Putensen, H., weeds in soils, 211.
 Puydt, J. de, Dubrunfaut's lime
 osmose process, 941.

Q.

Quinquaud. See Gréhant.

R

Rack. See Wilkens.
 Radiguet. See Tommasi.
 Radziszewski, B., oxidation of ox-
 alines and glyoxalines, 986.
 Radziszewski and J. Schramm,
 synthesis of a terpene, 1190.
 Radziszewski, B., and L. Szul, gly-
 oxalisomyline and its derivatives,
 985.
 Rammelsberg, C., isomorphous mine-
 rals which are not chemically ana-
 logous, 1096.
 — vanadates and phosphates of the
 alkali metals, 395.
 Ramsay, W., and S. Young, influence
 of pressure on the temperature of
 volatilisation of solids, 252.
 Raoult, F. M., freezing point of alka-
 line solutions, 254.
 — freezing point of saline solutions,
 1248.
 — freezing point of solutions of salts
 of the alkali metals, 701.
 — freezing points of solutions of salts
 of bivalent metals, 808.
 — general law of freezing of solvents,
 and deductions therefrom, 952.
 Rapp, M., nitration of the phenyl and
 cresyl ethers of phosphoric acid, 1337.
 Raschig, F., action of copper chlorides
 on metallic sulphides, 962.
 Rasinski, F., fractional distillation of
 mineral oils in a current of steam,
 936.
 Rathke, B., derivatives of thiocarb-
 amide, 1017.
 Raumer, E. v., lime and magnesia in
 plants, 917.
 Raveill, J. W., parabromometanitro-
 benzoic acid, 600.
 Rawson, S. G., estimation of cuprous
 chloride in copper liquors, 872.
 Rayman, B., and K. Preis, bromine
 compounds of tin, 1265.
 — reaction of iodine with car-
 bon compounds at high temperature,
 1311.
 Reboul, E., hydroxyallyldiamines, 578.
 — oxallyldiethylamine, 577.

Recknagel, G., a physical property of
 milk, 941.
 Redwood. See Abel.
 Reed, L., estimation of gluten in flour,
 122.
 Reese. See Fischer.
 Regnaud, J., and Villejean, com-
 position of a pathological liquid,
 1060.
 — purification of methyl alcohol,
 1279.
 Reichardt, E., amount of fatty acids
 in butter, 1219.
 — detection of arsenic, 368.
 — volumetric analysis, 213.
 Reichl, test for glycerol and woody
 fibre, 118.
 Reimer. See Haarmann and Jacob-
 sen.
 Reinhardt, J. H., drying of exhausted
 beet residues, 1411.
 Reinitzer, B., behaviour of chromium,
 iron, and aluminium acetates, 39.
 Reinke, J., effects of light on the re-
 spiration of oxygen by plants, 916.
 — influence of light on the disengage-
 ment of oxygen by plants, 1066.
 Reisenegger, H., hydrazine com-
 pounds of phenol and anisole, 440.
 Reissert, A., action of phenylhydr-
 azine on cyanhydrins, 1152.
 Rémont. See Riche.
 Remsen, I., and R. D. Coale, sina-
 pine, 1387.
 Remsen, I., and W. J. Comstock,
 oxidation of substitution-products of
 aromatic hydrocarbons, 319.
 Remsen, I., and W. C. Day, oxida-
 tion of β -cymene-sulphonamide, 456.
 Remsen, I., and E. H. Keiser,
 behaviour of air and moist phosphorus
 towards carbonic oxide, 149, 711.
 — oxidation of paradipropyl-
 sulphonamide, 457.
 — white phosphorus, 154.
 Renard, A., destructive distillation of
 colophony, 83.
 — dyeing cotton-yarn with aniline-
 black in the cold, 942.
 — an isomeride of laurene, 173.
 — resin-oils and essences, 843.
 Renard. See also Ludwig.
 Renouf. See Fischer.
 Reusch, H. H., volcanic ashes from
 the last eruption of Krakatoa, 415.
 Reuter, A., estimation of the three
 xylenes in coal-tar, 1431.
 Reyckler, A., argentammonium com-
 pounds, 721, 1261.
 — silver nitrate and ammonia,
 261.
 — silver nitrite and ammonia, 157.

- Reynier, E., measurement of electromotive force, 246.
 — variation of electromotive force in accumulators, 881.
- Reynolds, J. E., atomic weight of beryllium, 261.
- Ritthausen, H., melitose from cotton seeds, 1286.
 — occurrence of citric acid in the seeds of Leguminosæ, 1304.
 — occurrence of vicin in broad beans (*Vicia faba*), 1405.
 — solubility of vegetable protein-compounds in water containing hydrochloric acid, 1390.
- Ricciardi, L., diffusion of vanadium in the mineral and vegetable kingdoms, 159.
 — supposed recombination of oxygen-hydrogen mixture in the dark, 1092.
- Richard. See Carnot.
- Richardson, C., composition of American wheat, 1404.
- Riche, A., and A. Rémont, mascate pea, 1068.
- Richet, C., comparative poisonous action of metals on bacteria, 351.
- Richmond, W. T., a convenient temperature regulator, 656.
- Richter, R., a new form of hot filtering funnel and an apparatus for obtaining sublimates, 364.
 — carbonyldiphenyl oxide and hydroxyphenylene ketone, 324.
- Richter, V. v., and H. Münzer, benzene-azoketone, 1342.
- Richter, V. v., and G. Schüchner, action of chromyl chloride on cymene, 1342.
- Richter. See also Claus.
- Ricketts, P., franklinite ores from New Jersey, 27.
- Rideal. See Green.
- Riecke, E., measurement of the quantity of electricity produced by a Zamboni's pile, 138.
- Ris, C., phenyl- β -naphthacridine, 1357.
- Ris, C., and A. Weber, derivatives of β -dinaphthylamine, 752.
- Ritter. See Hell.
- Rizza, B., and A. Butlerow, azarone, 1042.
- Robb, W. L., position of amalgams of zinc and cadmium in electropotential series, 382.
- Roberts, W. C., and T. Wrightson, density of metals in the liquid state, 708.
- Robinson. See Mabery.
- Rodiczyk, E. v., cultivation of Peruvian rice in Austria, 769.
- Roeder. See Fittig.
- Roedwald, H., relation between chemical metamorphosis and transformation of forces during the germination of seeds, 1207.
- Roemer, T., process for preparing dichromates, 783.
- Roemer. See also Schmidt.
- Rohrbach, C., a new liquid of high specific gravity, refraction equivalent, &c., 145.
- Roloff and others, observations on diseases of animals, 95, 914.
- Romanis, R., specific volume of some double chlorides, 956.
- Rommier, A., cultivated wine-yeast, 1399.
- Rose, W. J., liquid extract of Senega, 540.
- Rosenbusch, H., sagvandite, 564.
- Rosenfeld, M., demonstration of the increase of the weight of bodies on combustion, 258.
 — lecture experiments, 258.
- Rosenstiehl, A., and Gerber, possible number of homologous and isomeric rosanilines, 739.
- Roser, W., diquinoline from benzidine, 1371.
 — isopropylsuccinic or pimelic acid, 423.
 — terebic acid, 459.
- Rossol, A., contribution to the histochemistry of plants, 847.
- Roth, C. F., belladonnine, 761.
 — methyltropidine, 761.
- Roth. See also Ladenburg.
- Rotheit, J., preparation of carbostyryl, 1183.
- Rother, O., cohesion of saline solutions and of their admixtures, 1251.
- Rotondi, E., electrolysis of pyrogallol, 175.
 — electrolysis of sodium chloride and its industrial applications, 248.
- Rousseau, G., an aromatic glycol, 180.
- Rousseau, G., and B. Bruneau, new method for preparing barium permanganate, 891.
- Rousseau, G., and A. Saglier, crystallised barium manganite, 1261.
- Roux, L., preparation of propyl- and amyl-naphthalenes, 1357.
- Roux. See also Vincent.
- Rowell. See Urquhart.
- Rubner, M., influence of stature on the interchange of matter and energy, 1393.
 — substitute values of the chief organic alimentary principles in the animal body, 189.

- Rubner, M., value of bran for human food, 622.
 Rükmann. See Thomson.
 Rugheimer, L., derivatives of malonic acid, 729.
 — method for the synthesis of quino-
 line-derivatives, 1050.
 Rugheimer, L., and R. Hoffmann,
 ethyl malonanilidate, malonparatolu-
 idic acid, and methyltrichloroquino-
 line, 1023.
 Runyon, E. W., manufacture of phos-
 phoric acid, 260.

S.

- Saare, change in the composition of
 potatoes by ripening, 1400.
 Sacc, deposit of saltpetre (potassium
 nitrate) at Cochabamba, Bolivia, 1271.
 — potatoes and sweet potatoes, 208.
 Sachs, J. v., correlative growths in the
 vegetable kingdom, 626.
 Sachtleben. See Fleischmann.
 Särnström. See Akermann.
 Saglier. See Rousseau.
 St. Capranica, chemistry of perspira-
 tion, 189.
 St. Martin, L. de, respiration in a
 super-oxygenated atmosphere, 911.
 Salfeld, E., permanence of carbonic
 oxide hæmoglobin, 343.
 Salkowski, C., formation of carbamide
 from sarcosine, 1394.
 Salkowski, H., hydroxyphenylacetic
 acid, 1175.
 Salomon, F., starch and its transfor-
 mation under the influence of acids,
 36.
 Salzer, T., water of crystallisation of
 normal and acid potassium succinate,
 584.
 — water of crystallisation of salts,
 806.
 Sandberger, F., amalgam from the
 Friedrichslegen mine near Oberlahn-
 stein, 563.
 — basalt from Naurod, near Wies-
 baden, 414.
 — identity of spathiopyrite and saf-
 florite, 405.
 Sandmeyer, T., replacement of amido-
 groups in aromatic derivatives by
 chlorine, 1311.
 Sandmeyer. See also Meyer.
 Sanger. See Hill.
 Sanson, irritant properties of oats,
 914.
 Sarasin. See Friedel and Soret.
 Sardo, S., synthesis of phenylmelilotic
 acid, 176.
 Sarrau, E., critical point of oxygen,
 149.
 Savory, J. T., uranium nitrate and
 acetate from residues, 397.
 Sawano. See Kellner.
 Schall, C., relation between molecular
 weight and velocity of evaporation,
 551, 950.
 Schaub, C., manufacture of starch,
 1234.
 Scheibe, E., separation of morphine in
 toxicology, 373.
 Scheibe. See also Wildt.
 Scheibler, C., action of sodium amal-
 gam on glucose and saccharin, 574.
 — glutamic acid, 1308.
 — non-identity of arabinose and
 lactose, 1287.
 — saccharin, 171.
 — strontia process for sugar, 133.
 — utilisation of phosphatic slags,
 783.
 Scheibler, C., and others, strontia
 process for separating sugar from
 molasses or syrup, 527.
 Scheid, B., quinone, 429.
 Scherks, E., hydroxymaleic acid, 993.
 Scheurer, A., gaseous chlorine as
 discharge in calico-printing, 1234.
 Scheurer-Kestner, coking of coal
 with conversion of its nitrogen into
 ammonia, 126.
 — consumption of fuel for heating
 boilers, 780.
 — heat of combustion of coal, 122.
 — notes on the soda industry, 643,
 1442.
 Schiaparelli, C., saponin from *Sapo-
 naria officinalis*, 332.
 Schiaparelli and M. Abelli, nitro-
 resorcinols, 174.
 Schiff, H., alanine and ethyl oxalate,
 995.
 — arbutin, 432.
 — condensation-product from salicyl-
 aldehyde, 1164.
 — metamidobenzamide, 455.
 — oxalamido-acids, 906.
 Schiff, J., safrone, 1338.
 Schiff, R., change in volume on melt-
 ing, 1089.
 — constants of capillarity of liquids
 at their boiling points, 808.
 — molecular volume of liquid sub-
 stances, 386.
 Schillinger, A., and L. Wleügel,
 anthroxanaldehyde and anthroxanic
 acid, 60.
 Schimper, A. F. W., chlorophyll,
 1367.

- Schlagdenhauffen. See Heckel.
 Schleh, heaping potatoes, 772.
 Schlieper and Baum, fixing indigo on cotton, 136.
 Schmelck. See Tonroe.
 Schmöger, Blumenthal's prepared rennet, 535.
 Schmoeger, M., and O. Neubert, influence of distillers' waste on milk secretion, 194.
 Schmöger, M., and others, blue milk, blue cheese, and ropy milk, 942.
 ——— notes on milk and butter, 236.
 Schmid, H., fixing perthiocyanogen in printing, 796.
 ——— researches by Witz on the oxidation of cellulose, 528.
 Schmid. See also Goldschmidt.
 Schmidt, A., hæmatite from the Hargita-gebirge, 405.
 ——— milk secretion, 93.
 Schmidt, E., berberine, 339.
 ——— caffeine methhydroxide, 338.
 ——— nonoic acids from different sources, 295.
 ——— picrotoxin, 845.
 Schmidt, E., and H. Roemer, occurrence of the higher fatty acids in the free state in vegetable fats, 96.
 Schmidt. See also O. Fischer.
 Schmitt, C., and A. Cobenzl, constitution of fatty acids, 1125.
 ——— gallisin, the unfermentable part of commercial glucose, 981.
 Schmitt, C. E., estimation of the volatile fatty acids in butter analysis, 1434.
 Schmitt, E., artificial butter colourings, 236.
 ——— orantia and carottin, 910.
 Schneidemühle. See Arnold.
 Schneider, C., artificial production of diastase, 1366.
 Schnell, A., nitromethylsalicylaldehyde and its derivatives, 1164.
 Schnitzer, F., preserving ground coffee, 880.
 Schöffel, R., and E. Donath, volumetric method of estimating manganese, especially in iron and steel, 116.
 Schotten, C., source of hippuric acid in the urine, 1057.
 Schrader. See Ladenburg.
 Schramm, C., organic hydroxylamine derivatives, 51.
 Schramm. See also Radziszewski.
 Schrauf, A., kelyphite, 972.
 Schrobe, A., evaporation of alcohol from wooden vats, 526.
 Schrodt, M., annual report of the experimental dairy farm at Kiel, 1396.
 Schrodt, M., and H. Hansen, composition of the ash of cow's milk, 1397.
 ——— influence of oat and wheat bran on the secretion of milk, 854.
 Schroeder, M., action of carbonic oxide on mixtures of sodium alcoholate and sodium salts of organic acids, 38.
 Schroeder, V., derivatives of benzylidene-phenylhydrazine, 1323.
 Schrott, M., and v. Peter, sunflower seed cake as fodder for milch cows, 483.
 Schuberg, F., stony concretions in animals, 348.
 Schucht, electrolysis, 541.
 Schudel, B., dipropyl propylidene oxide, 1283.
 Schüchner. See v. Richter.
 Schüpphaus. See Hübner.
 Schützenberger, P., a metallic radical, 822.
 ——— respiratory combustion, 857.
 Schulten, A. de., crystallised aluminium orthophosphate, 1263.
 Schultz, G., azo-colours, 1036.
 ——— formation of quinaldine, 1373.
 ——— molecular changes of hydrazo-compounds, 902.
 ——— preparation of quinaldine, 337.
 Schultz, and others, the Lupitz method of cultivation, 105.
 Schulz, H., antiseptic action of nickelous chloride, 1440.
 Schulze, B., chemistry of asparagine, 42.
 ——— influence of potassium bromide on nutrition, 850.
 Schulze, E., detection of asparagine and glutamine in vegetable juices and extracts, 373.
 ——— estimation of amides in vegetable extracts, 1438.
 ——— estimation of ammonia in vegetable extracts, 493.
 Schulze, E., and E. Bosshard, optical behaviour of certain amido-acids, 1306.
 Schulze, K. E., a simple method of estimating halogens in the side-chains of aromatic compounds, 1422.
 ——— α - and β -methylnaphthalene, 1183, 1184.
 ——— occurrence of diphenyl in coal-tar oil, 1030.
 Schulze, L., elementary composition of wheat starch, 284.
 Schulze. See also Meyer.
 Schunck, E., constitution of chlorophyll, 666.
 Schuppe, N., chemical composition of woody tissues, 285.

- Schuster, A., atmospheric dust, 225.
 Schwartz, A., nature of hop mildew and means of counteracting it, 629.
 Schwartz, H., so-called pyroresol, 79.
 Schwartz, H., See also Kraut.
 Schwarz, M., Pasteurising beer, 527.
 v. Schwerin, manuring experiments, 636.
 Scott. See Dewar.
 Scurati-Manzoni, G., action of aluminium sulphite on manganic hydroxide, 700.
 Seeling, L., feeding cattle with lupines, 1211.
 Seger, H., influence of titanate acid on the fusibility of refractory earths, 784.
 Seidel, M., oxidation of mercury diphenyl with potassium permanganate, 1135.
 Seifert, R., diiodoquinone and diiodoquinone-chlorimide, 431.
 Sellin, A. W., Paraguay tea, 354.
 Senator, H., action of heat on the animal system, 1393.
 Senderens. See Filhol.
 Senff, P., metabenzyltoluene, metatolyl phenyl ketone, and metabenzylbenzoic acid, 427.
 Senier, H., purgative principle of croton-oil, 947.
 — vesicating principle of croton-oil, 909.
 Sestini, F., and A. Funaro, the sum of mean temperatures in relation to the cultivation of corn and maize, 672.
 Shepard, C. U., corundum gems in India, 23.
 — meteoric iron from Georgia, 30.
 Shimidzu. See Divers.
 Shimosé. See Divers.
 Sidersky, M. D., separation of strontium from calcium, 497.
 Siewert, M., influence of cotton-seed cake on the secretion of milk, 669.
 Silber. See Ciamician.
 Silberstein. See Hemilian.
 Silva, R. D., synthesis of diphenyl-ethane from ethylidene chloride, 1356.
 Simand, F., examination of tannin extracts, 931.
 Simon-Légrand, old sugar-beet seeds as cattle food, 631.
 Sjögren, A., ganomalite, 972.
 — tephroite, 972.
 Sjögren, H., occurrence of gedrite as essential constituent of certain rocks, 274.
 Skraup, Z. H., constitution of quinine and quinidine, 86.
 Smetham, A., composition of silage, 770.
 Smith, E. F., minerals from Lehigh Co., 661.
 — parametadibromorthonitrobenzoic acid, 601.
 Smith, F. J., a high pressure electric accumulator, 246.
 Smith, H. E., do bones contain keratin? 1398.
 Smith, J. L., methods of analysing columbates by means of hydrofluoric acid, 111.
 Smith, L., peculiar concretions in iron meteorites, 976.
 Smith, W., methods for coking coal, 224.
 Smith. See also Brunner.
 Smolka, A., isobutylbiguanide, 287.
 Soden. See Michaelis.
 Soldaini, A., ptomaines, 342.
 Sommer, A., preparation of hydrobromic acid, 1091.
 Sommerlad, H., nepheline rocks from the Vogelsberg, 275.
 Sonnerat, E., hydrogen peroxide in medicine, 1082.
 Sorauer, A., studies on evaporation, 627.
 Soret, J. L., absorption-spectrum of blood in the violet and ultra-violet, 381.
 — ultra-violet absorption-spectra of albuminoids, 242.
 Soret, J. L., and E. Sarasin, absorption-spectrum of water, 701.
 Sostmann. See Stammer.
 Spezia, G., melanophlogite, 1104.
 Spica, G., and O. Magnanimi, hydroxybromotoluquinone, 175.
 Spiegel, A., vulpic acid, 841.
 Spiegler, E., acetoximes of the fatty series, 1115.
 — diphenylacetoxime, 1155.
 — the euxanthone group, 1182.
 Spindler, P., nitration of benzene-derivatives, 1310.
 Spitzer. See Kachler.
 Spring, W., a differential dilatometer and its application in an investigation on the formation of alums, 887.
 — colour of water, 259.
 — crystallisation of substances under pressure, 549.
 — duplothiacetone, 580.
 — expansion of alums, 892.
 — heat liberated by the compression of solids, 949.
 — influence of repeated compressions on the amount of sulphides formed by pressure, 959.
 — perfect elasticity of solid bodies, 256.

- Spring, W., and C. Winssinger, action of chlorine on sulphonic derivatives and organic oxysulphides, 1127.
- Springer, A., reduction of nitrates by ferments, 350.
- Stade, G., the working of a sugar refinery, 791.
- Stadler, O., mercaptans, 1328.
- Stadler. See also Meyer.
- Stammer, K., and P. Degener, percentage of sugar in beet, 133.
- Stammer, K., and E. Sostmann, estimation of sugar in beetroot, 642.
- Stanford, E. C. C., iodine in cod liver oil, 504.
- Staub, contributions to the doctrine of thermic constants in plants, 1067.
- Staub. See Toennies.
- Staute, H., pumolite, a new borate from Stassfurt, 1271.
- Steffens, F. W., kainite and bone-meal in sandy soil, 868.
- StegELITZ. See Claus.
- Stein, G., aluminium thiocyanate free from iron, 540.
- Steiner, A., conversion of fulminates into hydroxylamine, 277.
- Stelzner, A., the biotite-holding amphibole-granite from Syene, 413.
- the Frieberg gneiss, 829.
- the olivine of the mellilite-basalt of Hochbohl, 829.
- Stenglein, mashing temperature and the favourable temperature for yeast sowing, 789.
- Stern, D., hydrazobenzene and benzin, 1015.
- Steudemann, H., metanitrophenylthiocarbimide, 306.
- orthonitroparatolythiocarbimide, 307.
- Stevenson, T., solvent action of water on zinc, and effects of drinking water contaminated with zinc, 878.
- Stocks. See Fresenius.
- Stoddard, J. T., determination of the flashing point of petroleum, 1431.
- Stöhr, G. C., hydroparacoumaric acid, 1349.
- Stohmann, F., estimation of the fuel value of coal according to Scheurer-Kestner, 930.
- Stojentin, M. v., action of ethoxalyl chloride on diphenylthiocarbimide and triphenylguanidine, 1159.
- Stolba, F., disintegration of zircon, 821.
- Stone, G. C., volumetric determination of manganese, 499.
- Storer, F. H., methods employed by fishermen for "barking," and in other ways preserving nets and sails, 800.
- Storer, F. H., and D. S. Lewis, gases occluded by coke, 377.
- Storp, F., and others, effect of water holding sodium chloride and zinc sulphate in solution on the soil and on plants, 856.
- Stouhal, V., and C. Baros, galvanic temperature coefficient, 140.
- Stracciati. See Bartoli.
- Strasburger, J., derivatives of phenanthraquinone, 328.
- paramidofluorene, 754.
- Strecker. See Kekulé.
- Streng, A., a new microchemical reaction for sodium, 366.
- diabase rich in apatite from Gräveneck, 275.
- hornblende-diabase from Gräveneck, 275.
- Strippelmann and Engler, investigation of Benthem asphalte and analogous occurrences in Italy, 522.
- Strohmer, F., estimation of glycerol in aqueous solution by its refractive power, 877.
- manurial value of the lime-waste of sugar factories, 925.
- Strohmer, F., and others, estimation of sugar-beet and sugar, 1219.
- Struve, H., analyses of human milk, 1396.
- chloroform-water and ether in dialysis, 375.
- Struve, kephir, 1086, 1235.
- Stürcke, H., chemical composition of Caruauba wax, 1280.
- Stürcke. See also Hell.
- Stutz, saponin, 463.
- Stutzer, A., amount of easily digestible albuminoids in germinating maize, 772.
- analyses of wines from Palestine, &c., 646.
- manuring vines, 103, 1421.
- Stutzer, and others, inferior manures, 490.
- Stutzer. See also Kallen.
- Suida. See Liechti.
- Swanwick. See Prevost.
- Symons, W. H., starch varieties detected by the swelling process, 370.
- Szul. See Radziszewski.

T.

- Tacchini, meteoric dust and analyses of the soil of Sahara, 165.
- Tacke, B., apparatus for preparing oxygen quickly, 1254.
- inflammable gases in the animal system, 1395.

- Tamm, A., estimation of phosphorus in iron and in iron ores, 875.
- Tappeiner, gases of the alimentary canal of herbivora, 852.
- Taquet, C., chromic hydrogen selenite, 397.
- Tartarinoff, P., gelatin peptone, 344.
- Teall, J. J. H., the Cheviot andesites, 413.
- Tenney, F., estimation of lead as lead dioxide by means of the electric current, 777.
- Terreil, crystallised ammonio-silver chloride and iodide, 890.
- Thiade, A., distribution of water in heliotropically inclined parts of plants, 352.
- Thate, A., action of reducing agents on ortho-nitrophenoxycetic acid, 1170.
- Thelen. See Zincke.
- Thenn. See Keim.
- Thierfelder, H., physiology of the formation of milk, 914.
- Thomas, C., detection of Bordeaux red in wine, 370.
- Thompson, C. M., tetramethylammonium cyanide, 286.
- Thompson. See also Wright.
- Thomsen, J., cadmium oxide, 263.
- heats of combustion and formation of carbon bisulphide and carbonyl sulphide, 249.
- heats of formation of the oxchlorides of carbon, phosphorus, and sulphur, 250.
- heats of solution and hydration of the alkaline earths and their hydrates, 250.
- Thomson, R. T., litmus, rosolic acid, methyl orange, phenacetolin, and phenolphthalein as indicators, 691, 869.
- Thomson and Ruskman, bleaching yarns and fabrics, 1234.
- Thorpe T. E., atomic weight of titanium, 395.
- Thümmel, O., process for finishing silken goods with amber, 799.
- Thümmel. See also Poleck.
- Tichomiroff. See Lidoff.
- Tieghem, P. v., and G. Bonnier, effect of drying on the germination of seeds, 629.
- Tiemann, F., action of hydroxylamine on nitriles, 734.
- glucosamine hydrochloride, 724.
- Tiemann, F., and P. Krüger, amidoximes and azoximes, 1325.
- Tilden, W. A., and W. A. Shentstone, solubility of salts in water at high temperatures, 254.
- Timm, J., and others, cultivation of potatoes, 1411.
- Tölle. See Hübner.
- Toennies, P., and A. Staub, action of nitrous acid on furfurylbutylene, 1129.
- Törnebohm, A. E., phonolites of Eldalen, 276.
- Tollens, B., action of baryta on acetaldehyde; aldehyde gum, 989.
- behaviour of dextrose with ammoniacal alkaline silver solution, 283.
- circular polarisation of cane-sugar, 1285.
- derivatives of formaldehyde, 988.
- melting point of monochloroacetic acid, 990.
- oxymethylene and formaldehyde, 293.
- simple method of demonstrating Spring's compression experiments, 958.
- Tollens. See also Kent.
- Tommasi, D., dehydrating action of salts, 1251.
- heat of formation of fluorides, 545.
- law of thermic substitution constants, 883.
- non-existence of ammonium hydroxide, 1247.
- Tommasi, D., and Radiguet, battery with carbon electrodes, 1240.
- Toms, G., silage, 864.
- Tonroe, H., and L. Schmelck, solid and gaseous constituents of sea water and oceanic deposits, 31.
- Tozzetti, T., and others, phylloxera, 355.
- Traub, M. C., composition of cocoa butter, 40.
- Traube, M., cupric iodide, 962.
- test for hydrogen peroxide, 1073.
- Traube. See also Bernthsen.
- Trehonnais, cotton cake as fodder for milch cows, 1411.
- Tressider, R. C., preparation of diquinoline, 84.
- Tresidder. See also Japp.
- Tribe, A., conditions affecting area of electrification, 247.
- distribution of electricity on hollow conductors in electrolytes, 248.
- Tribe. See also Gladstone.
- Troost, L., permeability of silver to oxygen, 961.
- Troschke, carnallite, a cheap substitute for kainite, 868.
- Truchot, C., determination of the limits of electrolysis, 2.
- thermochemistry of alkaline fluosilicates, 884.

Truffi. See Bertoni.

Trzcinski, W., condensation of aromatic aldehydes with phenols, 590.

— condensation product of β -naphthol with benzaldehyde, 1185.

Tschermak, G., classification of meteorites, 975.

— the scapolite group, 566.

Tscherniac, J., and T. H. Norton, propimine thiocyanate, 664.

Tschirwinsky, N., formation of fat in the animal organism, 345.

Tschirwinsky, N., and others, formation of fat from carbohydrates in animals, 912.

Turpin, E., explosives, 1452.

Tursini, A., action of perthiocyanic acid on some aromatic monamines, 1140.

Tyndall, J., heat radiation from the earth, 486.

U.

Uffelman, J., on the digestion of cows' milk, and on the substances which increase its digestibility, 192.

Ulbricht, R., estimation of dry substance in wine and must, 1432.

Uldall. See Mayer.

Ullik, F., steeping of barley, 526.

Ulmann, C., nitrotoluidine from liquid dinitrotoluene, 1316.

Underwood. See Allen.

Unger, E., tin in preserved food, 800.

Urbain, constituents of vegetable tissues, 858.

Urech, F., action of alkalis on invert sugar, dextrose, and milk-sugar, 1112.

— birotation of glucose and milk-sugar, 1112.

— influence of the quantity of the constituents of Fehling's solution on the rate of separation of cuprous oxide by invert sugar, 574.

— inversion of cane-sugar by acids, 721.

— rate of reduction of Fehling's solution by sugars, 1112.

— relation between the solubility and rotation of milk-sugar, 36.

Urquhart and Rowell, process for working up strontium sulphate, 1225.

V.

Valenta, E., behaviour of some fats and lubricating oils towards glacial acetic acid, 1078.

Valenta, E., examination of fats, 504.

— seeds of *Bassia longifolia* and the fat contained therein, 919.

Varenne, E., preparation of mesitylene, 587.

Varigny, H. de, and P. Bert, influence of sea-water on fresh-water animals, 620.

Vater, H., action of monochloroacetic acid on orthamido- and paramidophenol, 1144.

Venable, F. P., hydrated carbon bisulphide, 260.

Verneuil, A., action of iodine on potassium seleniocyanate, 1109.

Viegand. See Beilstein.

Vieille. See Berthelot.

Vigier, F., physiological action of borax, 1061.

Vigna, A., fermentation of glycerol with the bacteria from ammonium tartrate, 170.

Villejean. See Regnaud.

Villiers, A., nitro-derivatives of ethane, 717.

— nitro-derivatives of ethylene, 33.

Vincent, C., methylation of phenol, 589.

Vincent, C., and L. Roux, two isomeric benzylnaphthalenes, 609.

Voelcker, A., comparative feeding value of barley, malt, and peas, 206.

— continuous cultivation of wheat and barley at Woburn, 482.

— feeding-stuffs, 630.

— four-year rotation experiments, 635.

— sterile soils from California, 486.

Voelcker, J. A., chemical composition of apatites, 162.

Vogel, H. W., rendering photographic films sensitive to green, yellow, and red rays, 1081.

Vogel, H., and others, researches on milk and milk-analysis, 1219.

Vossler, experiments with stall-fed cattle, 472.

Vulpis, G., pyrolygneous acid, 371.

— testing potassium bromate, 218.

W.

Waage, A., action of ammonia on propaldehyde, 172.

Wachtel, A. v., valuation of sugar-beets by their density, 118.

Wadsworth, M. E., the Bishopville and Waterville meteorites, 976.

Wäterling, H., manuring barley, 1419.

Wagner, nitrogen in bone-meal, 359.

- Wagner, A., chemical changes in decayed wood, 477.
 — some reactions of ozone, 259.
- Wagner, E., ethylene ethers of the nitrphenols and hydroxybenzoic acids, 433.
- Wagner, F., thermal conductivity of soils, 923.
- Wagner, L. v., manufacture of maize-starch as a new branch of agricultural industry, 528.
- Wagner, P., action of superphosphates, 1071.
 — amount of fat and albuminoids in feeding-stuffs, 631.
- Wagner, P., and others, contributions to systematic manuring, 634.
 — theory of manuring, 486.
- Wagner. See also Pawlinoff.
- Waitz, K., influence of galvanic polarisation on friction, 139.
- Walker, J. F., ethereal salts of nitrosophenol, 1003.
- Wallach, O., and A. Kölliker, action of hydrochloric acid on amidazo-compounds, 1014.
- Walter, J., preparation of magnesium, 1231.
- Wanklyn, J. A., employment of limed coal in gas-making, 223.
- Wanklyn, J. A., and W. Fox, constitution of natural fats, 35.
- Warburg, E., electrolysis of solid glass, 1241.
- Warder, R. B., dissociation of brass, 660.
- Warrington, R., some of the changes which the nitrogenous matters in the soil experience, 490.
- Warrington. See also Lawes.
- Warth. See Kelbe.
- Watson, D., specific gravity of commercial copper, 218.
- Weber, M., hydrocyanic acid from animals, 348.
- Websky, M., idunium, a new element, 1265.
- Websky and Daubrée, the Nogoya meteorite, 977.
- Weddige, A., a polymeride of trichloroacetonitrile, 35.
- Wedel, W., derivatives of ethylic acetate, 834.
- Weger, F., specific volume of saturated and unsaturated ethereal salts, 8.
- Wegschneider, R., isobutynaphthalene, 1185.
- Weibull, M., manganese minerals from Vester-Silfberg, in Dalarne, 409.
- Weidel. See Barth.
- Weigert, L., valuation of calcium tartrate, 1434.
- Weigelt and C. Engler, preparation of poudrette, 489.
- Weil, F., analysis of type-metal, 1429.
- Weingärtner, hydrogen peroxide as beer preservative, 1447.
- Weisbach, A., herderite, 1102.
- Weiske, water-culture of lupines, 1400.
- Weiske, H., gelatin, 619.
- Weiske, H., and others, composition and digestibility of serradella at various ages, 206.
 — digestibility of certain leguminous straws, 482.
 — ensilage, 1409.
- Weith. See Merz.
- Weitz, L., the thiophene group, 1130.
- Welsh. See v. Pechmann.
- Weltner, A., action of chlor- and brom-acetone, acetophenone bromide, and phenylbromacetic acid on ethyl acetoacetate, 746.
- Werner, E., bromophenols, 900.
- Werner. See also Berthelot.
- Wernicke, A., refining sugar and molasses by means of concentrated acetic acid, 790.
- Wesendonck, K., spectra of silicon fluoride and hydride, 649.
- Westenberger, B., isonitroso-compounds, 581.
- Westermaier, osmotic functions of living parenchyma, 1403.
- Westermayer, structure and functions of the epidermic system of plants, 1066.
- Whiting, J., process for phosphorising bronze or brass, 936.
- Wichelhaus, H., crystalline bases of methyl-violet, 595.
- Widmann, O., a new group of organic bases, 302.
 — action of ethyl chloroformate on amidohydroxypropylbenzoic acid, 1022.
 — action of nitrous acid on amidohydroxypropyl- and amidopropenylbenzoic acids, 1022.
 — nitrohydroxypropylbenzoic acid and its derivatives, 316.
- Wiedemann, E., change of volume of metals and alloys on melting, 7.
 — relations between coefficients of friction and galvanic conduction, 139.
 — spark-spectra emitted by metallic elements under varying conditions, 801.
- Wiedemann, M., contributions to the constitution of brazilin, 756.
- Wieland, J., electrolytic estimations, 1426.
- Wieler, A., effect of variations in the quantity of oxygen on the growth of plants, 625.
- Weisinger, F., action of ferric chloride on orthophenylenediamine, 1322.

- Wiessner, J., withering of flowers and leaves, 918.
 — action of rain, dew, and watering on plants, 766.
- Wiik, F. J., elaeolite syenite from Jivaara, 413.
 — relation between the optical properties and chemical composition of pyroxene and amphibole, 971.
 — triclinic potash soda felspar, 970.
- Wilber. See Austen.
- Wildt, E., manuring experiments in Posen in 1882, 361.
- Wildt, E., and A. Scheibe, estimation of nitric acid, 871.
- Wilhelm, G., ratio of flesh to stone in stone fruit, 477.
- Wilkens, F., and G. Rack, orthochlorobenzoic acid and its derivatives, 602.
- Will, W., *æsculetin*, 87.
- Will, W., and K. Albrecht, derivatives of pyrogallol and phloroglucinol, and their relation to daphnetin and *æsculetin*, 1335.
- Will, W., and O. Jung, daphnetin, 1042.
- Willard, X. A., and others, cheese from skim-milk and foreign fat, 536.
- Willgerodt, C., and E. Huetlin, para- and ortho-nitrophenyl ether of dinitrophenol and of picric acid, 1328.
- Williams, G., liquid hydrocarbons from compressed petroleum-gas, 879.
- Willm, E., preparation of cyanides and ferrocyanides from trimethylamine, 1276.
- Willmack. See Fischer.
- Wilm, T., a new rhodium salt, 660.
- Winkelhofer, preparation of manure from iron furnace slag, 212.
- Winkler, C., recovery of ammonia from the gases of coke-ovens, 1441.
- Winssinger, C., a new fractioning apparatus, 364.
- Winssinger. See also Spring.
- Witt, O. N., indophenols, 743.
 — indulines, 743.
- Witt. See also Nölting.
- Wittkamp, L., action of ammonia on the ethers of nitronaphthol, 1036.
- Witz, A., combustion of explosive gases in various states of dilution, 1247.
- Wleügel, S., and S. Henrichsen, magnetism of organic bodies, 1243.
- Wleügel. See also Friedländer and Schillinger.
- Wolfbauer, J. F., chemical composition of the water of the Danube above Vienna in 1878, 122.
 — irrigation by means of Danube-water, 635.
- Wolfbauer. See also Hohnel.
- Wolff, A., use of air saturated with bromine in the precipitation of man-ganese, 640.
- Wolff, C. H., valuation of indigo, 507.
- Wolff, L., bismuth salicylate, 905.
- Wolff. See also Keuzhage.
- Wollner, R., hydroxy-base of cyan-methine, 1292.
 — the so-called rubeanhydric acid, 1109.
- Wollny, E., effect of artificial influences on the internal causes of growth, 624.
 — effect of depth of sowing on the germination and growth of plants, 1404.
 — influence of artificial manure on the physical properties of soil, 210.
 — influence of a crop or shelter on the physical properties of a soil, 922.
 — manuring with crude ammonium superphosphate, 926.
- Worm-Müller and others, testing grape-sugar and some reactions of sugars, 778.
- Wortmann, J., influence of radiant heat on the growing parts of plants, 626.
- Wright, C. R. A., manufacture of cuprammonium and zincammonium compounds and their technical application, 1232.
- Wright, C. R. A., and C. Thompson, chemical affinity in terms of electromotive force, 246.
- Wrightson. See Roberts.
- Wroblewski, S., boiling points of oxygen, air, nitrogen, and carbonic oxide under atmospheric pressure, 817.
 — critical temperature and pressure of liquid oxygen, 148.
 — density of liquid oxygen, 14.
 — ebullition of liquid oxygen and solidification of nitrogen, 553.
 — liquefaction of hydrogen, 888.
 — properties of liquid methane and its use as a refrigerator, 1275.
 — specific gravity of liquid oxygen, 388.
- Wurtz, A., action of heat on aldol and paralldol, 579.
 — β -butyl glycol, 169.
 — electric conductivity of saline solutions, 882.
 — hydration of crotonaldehyde, 420.
- Wyrouboff, G., crossed dispersion of several rhombic substances, 381.

Y.

- Young, S., test for gallic acid, 119.
Young. See also Ramsay.

Z.

- Zaboudsky, new method of estimating carbon in steel, 1427.
Zacharewicz, E., urine of cows and sheep, 1204.
Zacharias, E., albumin, nucleïn, and plastin, 90.
—— contents of the cribriform vessels *Cucurbita pepo*, 1067.
Zander, A., specific volumes of normal fatty acids and alcohols, 1278.
Zatzek. See Hönig.
Zay, C. E., trimethylamine aurochloride, 286.
Zeller, A., fate of iodoform and chloroform in the organism, 1062.
Zepharovich, V. v., mineralogical notes, 1098.
Ziegenspeck, H., rock from the volcano Yate, 973.
Zimmermann, J., and A. Müller formation of diquinoline by aid of heat, 1372.
Zincke, T., two isomeric phenylmethyl glycols, 1003.
Zincke, T., and D. v. Hagen, cinnamaldehyde, 1343.
Zincke, T., and H. Thelen, phenylhydrazine-derivatives of hydroxynaphthaquinone, 1359.
Zopf, W., occurrence of butyric ferment, 476.
Zschokke. See Graebe.
Zulkowski, estimation of manganese in iron-ores, 116.
Zulkowsky, C., aromatic acids as dye-forming substances, 1169.
—— colouring matters formed by the union of phenols with aromatic aldehydes, 837.
Zulkowsky, K., potassium ferrocyanide manufacture, 501.
Zuntz, M., behaviour of amides in animal nutrition, 472.
Zeisel, S., colchicine, 1387.
Zürrer. See Goldschmidt.
Zwergel, A., extracting by diffusion, 539.
-